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DENTAL BRIEF.

A Monthly Magazine of Dental Art,
Science and Literature.

T. B. WELCH, M.D., Editor,
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DENTAL BRIEF.

VOL. II.

JANUARY, 1898.

No. 6.

ORIGINAL COMMUNICATIONS.

LOWER DENTURES.

By L. P. Haskell.

Every dentist realizes the difficulties of the insertion of lower dentures. It has seemed to me that I have had more than my share of especially difficult cases. Out of a collection of seventy-five models on which metal plates have been made, there is but one first-class case, a broad, deep ridge. The most of the others show excessive absorption, so that there is no ridge, or but a thin ridge of membrane left. In some the absorption has been so great that on the lingual side a ridge of maxillary extends above it; in several there is an abnormal growth of maxillary in the middle of the jaw at the lingual margin.

Of course in this flat condition there is nothing to hold a plate firmly in place. For many years I advocated additional weight to hold the plate in place. A recent experience in my own mouth showed the futility of this, for my jaw being flat I found, in leaning forward to speak to any one, the weight of the plate would slide the plate forward against the lip, a lesson I could not have learned otherwise.

Another difficulty is found in the mass of glands and membrane often encountered on the lingual side of the jaw; when the tongue is lifted they rise above the top of the jaw, and if the plate extends below the inner margin, the movement of the tongue lifts the plate and keeps it bobbing up and down. To avoid this the margin of the plate must be cut away till it is no longer lifted.

Often the membrane is loose over the surface of the jaw, and sensitive, much more so than on the upper jaw. The better the fit the more likely to be irritation, because on pressure, portions of this membrane yield more than others, and cause undue pressure elsewhere, which must be relieved. I always tell the patients they need not be surprised at irritation at some point.

but always to come and have it relieved. Care must be taken not to set the front teeth too far forward or outside of the ridge. An exact articulation must be secured, not allowing pressure on the front teeth nor second molar, and equal on both sides of the jaw.

There is a very general tendency in lower sets to make the teeth too short, preventing restoration of the features, and making mastication more difficult and tiring the jaw in its upward movement to find a resting place.

To secure impressions of flat jaws use a narrow, flat impression tray. Take the impression in modeling compound, extending it over the top in order to hold in place. Trim away the margins, and in this take a plaster impression, requesting the patient to thrust the tongue out of the mouth.

As a rule rubber makes as satisfactory a plate on the lower jaw as any material, as absorption takes place to a greater extent on the lower jaw than on the upper, no matter what the material, for what reason I am unable to say, and in failing to relieve it the plate does not show as much.

Few are aware of the fact that absorption sometimes takes place on the lower jaw to such an extent that the bunch of nerves, the mental ganglion, between second bicuspid and molar, is exposed on top of the jaw, instead of its normal position on the side. When this occurs there is, of course, a very sensitive point on which the plate may not rest. For some unexplained reason this occurs usually on the right side.

DENTAL PRACTICE IN BURMAH.

BURMAH, BRITISH INDIA, Oct. 27th, 1897.

TO THE EDITOR OF THE DENTAL BRIEF :

I have the pleasure of receiving the (now) DENTAL BRIEF, and I assure you I thoroughly digest its contents every month. I cannot begin to tell you what a great help the dental journals are to a dentist who is 12,000 miles away from his native land, and where we have not dental societies, or meeting of any kind where we could get together and hear of each other's latest methods, etc. So, if it were not for the different dental journals, I am afraid many of us would become very rusty, know really nothing of the latest ideas, inventions and modes of operations of the present day, and, therefore, drop far behind the times. I had the great pleasure of reading an article some time ago, written for the DENTAL BRIEF by one of our lady dentists in Central

America, the "Effects of Tropical Climates on Gold Foil." The writer mentioned that an American dentist near her had died, and she purchased the gold foil which had belonged to him. This she found had been effected by the climate and was very old, etc. The result was that she had great trouble with it, and found it would always chip off and break. I would like to mention here my experiences with gold in the tropical climates. There are many things and modes of doing things in the tropics which one would not be under the necessity of having to think of at home. But I am not going to take up your most valuable time now by mentioning a number of little ideas which are never thought of till necessity compels. I often wish I could get in a car and go to a dental depot and get just what I want. What a relief it would be.

To return to my intended subject, gold filling in the tropics. I never have had the slightest trouble working gold since I have been able to use the Bonwill mechanical mallet, the inventor of which, I am proud to say, is my father, and who also taught me to pack gold with great rapidity.

Rangoon is, I think, the worst climate in the world for a dentist, in fact for any one even, to live in. For six months we have a most terrible rain, night and day. Then often, during the rainy season, in the middle of the day, I am obliged to send patients away till another day, it being so dark I cannot see to do the work properly. My instruments will rust badly over night, and therefore have to keep a Burmah to do nothing but keep my instruments clean during the rains. The remaining six months a drop of rain never falls; sunshine all the time. The climate is always the same, intensely hot. To get a breath of fresh air we must take a sea voyage or go to the mountains. The latter trip means taveling on elephants or in bullock carts for days in the terrible tropical sun.

Nothing can be more severe on gold than the rain here; yet, as I said before, I have never had the slightest trouble. My method is this, very simple. Prepare the cavity and put rubber-dam on, and, as all know, whether in the tropics or elsewhere, the rubber must be tied around the teeth perfectly; then with a little chloroform I dry the cavity, keeping it covered all the time by a perfectly dry napkin to keep it from the damp atmosphere. My gold is cut and ready, but not annealed. Each piece, as I am ready to use it, I am always sure to heat till red hot, then, allowing enough time to cool, I quickly insert into the cavity and thoroughly condense with the mechanical mallet. As soon as I

have thoroughly malleted this piece I quickly press dry napkin into cavity, heat next piece of gold, etc., till the filling is finished. I use gold one year old that has been kept in a safe all the time, only in the paper books in which the gold foil is purchased. No bottling or anything like this. The filling, before I remove the rubber, I cover with wax or paraffin, and with a warm instrument thoroughly melt all over the filling. This is to prevent any possible chance of leaking. All the houses in the tropics have no windows, therefore we are unable to keep out dampness, etc. So you can understand what it means to do gold fillings while it is raining in torrents. I should like to write a short article for the "DENTAL BRIEF" on the "Dental Practice in the Eastern Countries, the Natives, Climate," etc. I think it would interest the readers.

Very truly,

E. W. Bonwill.

MEDICINE-TAKING EXTRAORDINARY.

Dr. Dykes, writing to the *British Medical Journal*, quotes the following interesting case: "In 1817, at the Lincoln Assizes, in an action, Wright *vs.* Jessop, the plaintiff, an apothecary of Bottesford, sought to recover from the defendant, a bachelor of opulence, residing near Lincoln, £787 18s. for medicine and attendance during twenty-five years. By the statement of the plaintiff's counsel it appeared that the defendant was of a hypochondriacal turn, and had taken pills for a great number of years. He used to have from 600 to 1,000 pills sent to him at a time, and in one year he took 51,000, being at the rate of 150 a day. There were also thousands of bottles of mixture. From the ravenous propensity of the patient for physic it was deemed necessary to call in two physicians, who, inquiring of the defendant what was the course of medicine and nourishment he pursued through the day, answered as follows: 'At half-past two o'clock I take two spoonfuls and a half of jalap, and then a quantity of electuary; then I sleep till seven, and repeat the dose of jalap and electuary; at nine o'clock I take fourteen pills of No. 9, and eleven pills of No. 10 to whet my appetite for breakfast; at breakfast I eat a basin of milk; at eleven I have an acid and alkali mixture; afterward I have a bolus; and at nine at night I have an anodyne mixture and go to sleep.' After some progress had been made in the evidence a compromise took place, the plaintiff accepting a verdict for £450."

ACTION OF CHLOROFORM.

The primary action of the chloroform is to depress the blood-pressure chiefly by its vaso-motor effect, secondly by its cardiac effect, and finally that while the drug does exercise a depressant effect on the respiratory center, the failure of this center is chiefly due to anemia. As, however, an intact respiratory center means regular breathing, we watch this function to determine the dose of chloroform actually inhaled, and because any variation in this function, as shown in irregular breathing, means that the chloroform is disordering arterial tension. Death from chloroform, then, is usually a vaso-motor death, for an intact arterial system is as important to vital functions as an intact cardiac apparatus.

H. A. Hare, Therapeutic Gazet.

BRIDGE-WORK.

Dr. I. N. Carr, Durham, N. C.

The beauty of all artificial work lies in the ability of the artist to conceal his art, and nowhere is this more desirable than in prosthetic dentistry. In bridge-work there are various elements which enter into its proper construction.

Suppose the case requiring the use of an upper cuspid tooth for treatment. To crown the cuspid with gold would be extremely inartistic; to cut it down sufficiently to put on a "window" crown would injure the shape of the tooth, besides showing an unsightly band of gold at the cervical margin. How then shall we secure one end of the bridge to this tooth in the strongest and most artistic manner? Briefly stated, I proceed as follows: Grind the palatin surface of the tooth sufficiently to allow a cap of gold to fit over it; then drill three pits, sufficiently deep to cement in three platinum pins, the size of the pins used in artificial teeth, drilling the pits at point most distant from the pulp. Burnish a piece of platinum foil over the surface of the tooth that you have ground down; trim it to shape and thrust the platinum pins through the foil into the pits, allowing them to project sufficiently to come away with the foil when removed, which now proceed to do by means of "sticky wax" softened, and pressed over the foil and pins. Invert in plaster and very fine marble dust; when this has set remove the wax and flow pure gold or 22-k. gold solder over the platinum and pins sufficiently thick to give the necessary strength. With this in position, take impression, make articulating model, back up your teeth, put in place and solder. By this

method no gold shows except at the tips of the porcelain teeth, and possibly a gold tip on the cuspid. This method was evolved from the fertile brain of our fellow-member, Dr. C. C. Alexander. I speak of the advantages of this method of construction in bridge-work from personal experience, as I have one in my own mouth, besides having made others to the perfect satisfaction of my patients.

A NEW HEMOSTATIC.—Dr. Frohman, a dentist of Berlin, has recently given to the profession the results of his experiments on ferripyrin, and states that it has great hemostatic properties. Its application to more than 100 stubborn cases of bleeding gave excellent results. Post-hemorrhage seldom resulted, and when it did further application caused permanent arrest. There are no painful after-effects, and it yields perfect coagulation. Ferripyrin is a combination of one part ferric chlorid, three parts antipyrin, and five parts water. It is a dark red liquid, and can be purchased at the drug stores. It has an agreeable taste, and is readily applied. In a lower extraction employ a small spoon, and direct a sparing of the mixture into the socket; in an upper case apply a saturated pellet of cotton to the socket. It gives immediate relief, and one application usually suffices.

NORTHERN ILLINOIS DENTAL SOCIETY.

TO THE PRESIDENT AND MEMBERS OF THE NATIONAL DENTAL ASSOCIATION, AND TO THE PRESIDENT AND MEMBERS OF THE NATIONAL ASSOCIATION OF DENTAL EXAMINERS.

Gentlemen :—At the tenth annual meeting of the Northern Illinois Dental Society, held at Rockford, Ill., October 20th and 21st, 1897, the undersigned were appointed a committee to draft and present to your associations suitable resolutions, with a view to remedy an existing evil regarding the interstate practice of dentistry, and we herewith submit the following for your consideration :

WHEREAS, A legal practitioner of any one of the United States, who desires to remove to another State, is, under the existing laws, compelled to comply with certain requirements of the dental law of that State ;

AND WHEREAS, In many instances such legal practitioner, sometimes of many years' experience, is subjected to a more or less severe theoretical examination, which cannot even be suc-

cessfully passed by many who are fresh from the college halls, therefore be it

Resolved, That the National Association of Dental Examiners and the National Dental Association be, and are hereby, requested to enact such rules, or to secure such modification of the dental laws of the various States, which, under reasonable restrictions, will enable competent practitioners to remove from one State to another without being compelled to submit to provisions, which are eminently unfair to a large number of capable dentists.

LOUIS OTTOFY,

Attest :

W. H. TAGGART,

JAMES W. CORMANY,

M. L. HANAFORD,

Secretary.

Committee.

PATENTS RELATING TO DENTISTRY RECENTLY GRANTED.

By John A. Soul.

593777, Fumigator, Thomas H. McDonald, Potomac, Montana.

594302, Inhaler, George B. Underwood, New York, N. Y.

594543, Adjustable head rest, Charles A. Lee, Canastota, N. Y.

594486, Dental appliance, Joseph E. Nichols, Rochester, N. H.

594572, Arm rest, Wm. M. Slavik, St. Louis, Mo.

594952, Dental tool guard, Frank F. Hoyer, Owosso, Mich.

595068, Dental appliance, Wm. T. Lyon, Portland, Oregon.

594961, Depurator, Thomas N. McLean, Elizabeth, N. J., and C. B. McLean, Stamford, Conn.

595532, Dental cuspidor, Dennis S. Doyle, assignor to W. W. Doyle, Philadelphia, Pa.

595533, Dental cuspidor, Dennis S. Doyle, assignor to W. W. Doyle, Philadelphia, Pa.

595301, Dental apparatus, Charles D. Grundy, Batley, England.

The new dental law in Pennsylvania has this wise provision, viz.: "Each applicant shall also furnish to the board satisfactory evidence of proficiency in the manipulative procedures of dentistry, either by producing an example of work, duly attested by the demonstrator in charge of the clinic of the college issuing a diploma, or by a practical demonstration of skill in the presence of the examining members of said board."

IS AMALGAM INJURIOUS?

Does amalgam filling (owing to mercury) cause ill effects on the system? A dentist here removes them and places cement or gold in all such cavities. He operated on one patient for antrum trouble, both antrums at same time, claiming amalgam was cause of trouble. This patient complains of frontal headache; says the dentist performing the antrum operation did her no good; and, from the history of case, I am confident it was wrong.

I have used amalgam extensively for ten years, not only large fillings, but crowns and bridges, after the Close method, and have had no bad effects on my patients. I seldom see both antrums involved at the same time. How mercury combined in filling could cause antrum trouble of any kind, without showing signs at the membrane of mouth, I am at loss to understand. I have met many of the little red and blue pill school claiming this, but this is the first dentist I have met with such peculiar views.

I. B. Archer.

PAINLESS OPERATIONS.—Dr. North, of Iowa, in the *Microcosm*, tells us how he does painless operations. First—Deciduous tooth, cavity sensitive. Wipe the cavity dry, then bathe with creosote and again dry the cavity; remove decayed substance with a sharp excavator, cutting from the center toward the border of the cavity, with a lifting instead of a downward movement, and the operation can be performed without pain. Second—Permanent tooth, cavity sensitive, patient in his teens. Apply the rubber-dam, dry the cavity with hot air, and bathe with creosote. In a few seconds wipe this out, moisten with alcohol, and again dry with hot air; then remove all foreign substance with a sharp excavator or bur, cutting toward the border of the cavity, with a lifting instead of a pressure movement. After all foreign matter is removed, if the cavity is too sensitive to cut and prepare for a gold filling, use cement for the filling, keeping it well protected from the secretions of the mouth for some time, and this filling will be very durable; then in a few months it can be painlessly refilled with gold.

“Cleanliness is next to Godliness,” especially it should be with dentists.

CURRENT THOUGHTS.

A PLEA FOR UNIFORMITY.

A. B. Crawford, D.D.S., Grand Rapids, Wis.

Under the title "Is It Justice," there appeared in the *Ohio Dental Journal*, of 1896, an article in which I took the stand that a dentist who was entitled to practice in any one State of this Union, ought also to be equally entitled to practice in any other State of the Union. Since that article appeared, numerous letters received would also tend to show from the ground I also took, that the non-graduate should have some of the good things of this world in the way of permission to make a change of residence, etc., as well as the graduate.

Numerous instances in which men who have been practicing in one locality for from fifteen to twenty-five years, and who for reasons that are sufficient in themselves, desire to make a change of climate, but not being graduates of a dental college they would run up against a dental board who might not agree with them, have been noted.

After reading over a current issue of the *Items of Interest*, and noting some of the really brilliant replies made to questions propounded by the State Board of New Jersey to college graduates, I am reminded of the story of Sargeant Jack —, of the Volunteers of '61. He had commanded his company in many a hard fought battle, up and down through Old Virginia, and acquitted himself so nobly that he was recommended by his colonel for a commission in the regulars. Jack went before a board of West Pointers for examination. Not a solitary question could Jack answer in proper form, not even to the forming of a hollow square. He was asked what he would do if in command of infantry and attacked by calvary? Jack replied: "Form a hollow square and give them h——!" His examination papers got before Mr. Lincoln, without a recommendation attached by the board. Mr. Lincoln found the one correct answer and endorsed: "Give this man a commission." Now it may be that those graduates are competent to practice dentistry though they cannot pass an examination that is creditable. Of that I cannot say, but it is pretty certain that the non-graduate that has been practicing in one locality for ten years or more, even though he could not

pass before a dental board, such an examination as would entitle him to practice, is at the same time in a much better position than almost any recent graduate, for like "Jack," he has learned the art in actual service and will seldom make a blunder.

I do not wish to be understood for one moment as being antagonistic to the State Dental Boards, but let us have a general law for all the States alike, and a graduate who passes before the National Board, whose representatives should examine for all dental colleges, before diplomas are granted, be permitted to practice anywhere he pleases in this Union. A verified certificate that a non-graduate has practiced ten years in any State, or altogether, should be his passport to any other State in the Union. We are but one great people and are all under one flag.

Ohio Journal.

SELF-CULTURE.

The annals of the human race show that the great, practical real work of the world—the work that has often shaped the destiny of nations and changed the face of the earth—has been done by men of self-culture—men whose youth was not wasted in acquiring useless knowledge. While our university men are spending their days and nights in trying to discover the meaning of an obscure passage in Aristotle or Plato which, when found, as Shakespeare said of the grain of wheat in the bushel of chaff, is not worth the search, practical men—the Franklins, the Morses, the Edisons are bringing the lightning from heaven to serve as man's handmaiden. All the wonders of Aladdin's lamp have been realized, not by the *genie* of the Arabian story, but by the genius—the practical genius of man. While the slaves of the dead languages are wasting the precious hours of too short a life in useless attempts to ascertain the value of a Greek particle, which really has not a particle of value to us of the living, breathing present, the practical men of the day are bringing New York and St. Louis, Washington and Chicago, within speaking distance. While your classical scholars are pouring over the dead writers, to discover the comparative size and speed of the Greek and Roman chariots, our live, practical men are running trains from New York to San Francisco in five days, supplied with comforts and conveniences, which all the power of the Cæsars could not command.

Thomas Carlyle spent three score years in planning and pro-

claiming his "philosophy," which has not added a single pleasure to life, or a single benefit to the human race. During those barren years men of self-culture were revolutionizing the world by their practical work: George Stephenson, who had no college training—no education of merely "words, words, words," was inventing the railway locomotive, which was in a few years to revolutionize the civilized world; Morse was inventing the telegraph, which was to bring all nations into daily and hourly communication; Pitman was inventing phonography, which was to preserve for all time the wisdom of orators; Daguerre was studying out that remarkable invention of which we live to witness its perfected results in photography; Elias Howe was inventing the sewing-machine, which, by saving time has lengthened life; Cyrus H. McCormick was inventing those wonderful agricultural instruments that have changed the conditions of husbandry and enabled a boy to do ten times more work than a man could do by the old method.

Work is necessary, but let it be work that points to a "rich end." Let it be work that shall lessen the misery of the world, that shall make glad the homes of the poor, that shall bring hope to the despairing, and shall relieve suffering. The true friend of the poor is he who saves him from grinding toil by the invention of labor-saving machines, who raises him from a common workman to a skilled artisan; then he can say of himself as Jean Paul Richter did: "I have made as much out of myself as could be made of the stuff, and no man should require more."

E. L. Didier, in Self Culture.

TREATMENT OF ABSCESS.

Dr. Monroe, Flint, Mich.

Two years ago a gentleman about 45 years of age came into my office and said: "I have some teeth that have been troubling me for over a year. I have been in two offices during that time and they had started to treat them, but it hurt so badly that I never went back to either of them for a second treatment. I don't want to be hurt; I would prefer the toothache rather than to suffer pain in a dental chair."

Most of his back teeth had been extracted under an anesthetic, and he was depending largely on his front teeth for mastication. The most troublesome tooth was the upper left cuspid, which was slightly raised in its socket, and a little loose. The lateral and central incisors next to it were also devitalized.

Knowing that I would probably not be able to get him in the chair for a second treatment, I determined to try to make it a clean operation at one sitting.

I opened all three teeth through their root-canals, wiped out all the pus I could press out through the canal of the cuspid, washed it out carefully with warm, carbolized water, forced carbolic acid and iodin, equal parts, into the pus cavity, and filled it with chloro-percha and gutta-percha points. I then cleaned out the canals of the central and lateral, sterilized them, and filled them in the same way. I told him that they would probably trouble him for a day or so, but after that they might never bother him.

I met him on the street in a few days, and he said that the night after the treatment he slept little or none at all. The gum had swollen and burned, as he explained it, but they were then all right. In about two months from that time I put in permanent fillings, and they have not troubled him since. I had occasion to treat the lingual root of an upper right second molar, which would have been almost impossible to open through the palatal side, in the same manner as the case above mentioned, with the same results, a little more than a year ago. Yet, on account of the trouble following, I have never followed this for a practice, and, in fact, have extracted molars in preference.

Prior to and since that time I have treated similarly affected teeth by cleaning out the root-canals, through the apex of the root, by using Gates-Glidden drills, if necessary, or even a 50 per cent solution of sulfuric acid. Then, after injecting about a $1\frac{1}{2}$ per cent solution of cocain to a mixture of tincture of iodin, carbolic acid, sulf. morphia, atropin sulf. (pot. iod.), glycerin and water into the gum, over the apex of the root, which renders the gum entirely painless, lance the gum in the form of a cross, and with a large, round, sharp bur drill through the process, completing this work with a sharp fissure bur, with which it is an easier matter to cut off the end of the root or drill out any diseased bone in the pus-cavity. The small particles of process and tooth are now washed out, first with warm carbolized water, then with peroxid of hydrogen, followed by carbolic acid and iodin, equal parts, forced through the canal and out through the fistula, leaving a thread of cotton saturated in carbolic acid and iodin in the canal, with another similar one in the fistula. The after-treatment consisted in simply washing out the cavities with peroxid of hydrogen, unless the pus continued to form, when the first operation would be repeated.

Sometimes a cure would be brought about after the first treatment, and again, after two or three months' treatment, the tooth would have to be extracted.

At the time of our last convention in Grand Rapids, I had an upper right central incisor that I had been treating in this way for about two months, with no hope of success. I consulted several of the doctors present in regard to it, and received as many different replies. As they all had some failures, I concluded that I would have to extract it. But before doing so I cleaned it out thoroughly, sterilized it well through the canal and fistula, and filled the canal permanently, after I had thoroughly dried it with tannic acid and cotton. The patient remarked that the tooth felt better than it had at any previous treatment. Every few days I would wash out the fistula, which remained open of itself, caused by the purulent discharge that had no other avenue of escape, with warm, carbolized water, and inject a few drops of tincture of iodine in the pus-cavity. In a short time the opening healed up, and has since caused no trouble.

Since that time I have been filling the root-canals of abscessed teeth at the first sitting, after the opening has been made through the process and the pus-cavity thoroughly burred out and cleansed. I fail to see of what benefit it is to leave the root and canal unfilled. To my mind, it would be as easy to treat a chronic case of appendicitis through the oral cavity as to treat a chronic abscessed tooth through the root-canal. When we thoroughly clean out a root-canal, open well through the apex to the fistula, we have, in my opinion, done all we can through that channel. It is better to fill it at once, and the fistula will allow any pus to escape that might otherwise be enclosed. Should any pus form afterward, it is evident that we have a diseased tooth to drill out, which can be reached only through the fistulous opening. That we have a diseased tooth and not process is proven by the fact that when we extract an abscessed tooth, the cavity left generally heals up in a few days, causing no further trouble. After cutting off the end of the root, we have the diseased portion extracted, and the cavity, represented by the fistula, equals the cavity made where the tooth was extracted. The fact is, to be successful we must be radical.

Western Journal.

CROWN- AND BRIDGE-WORK.

The principal elements entering into a successful operation are, first, a healthy condition of the mouth and teeth or roots to be used as abutments; second, their proper preparation to receive the attachments; third, accurate fitting of caps and bands; and, fourth, perfect articulation. Any one of these conditions ignored, failure may ensue.

Before advising the placing of a bridge, care should be taken to see that the teeth are in good condition and sufficiently strong to do the work imposed. Too much strain should not be placed on a single tooth or root. Ordinarily two good roots will support a bridge of three or four teeth, and I have seen satisfactory cases of even five that have been in for a number of years, but that is rather more than is generally advisable. I am speaking now more particularly of permanent fixtures. It is perfectly safe to put a full denture on the two cuspids and the two first or second molars. A piece of this kind is very strong, as there is little lateral motion, and each side helps to support the other. A cuspid and first molar, and very often the second molar, will form safe anchorages. The two centrals will carry the two laterals and the laterals the centrals. Frequently the two cuspids may serve to carry the four incisors if they stand well apart, and the teeth may be placed nearly in a straight line, but if the arch is narrow and very much curved the leverage would be so great as to eventually loosen the abutments.

In the preparation of the teeth and roots the greatest care should be used; for if not properly done the chances are against the work proving satisfactory. While the trimming of the teeth seems like a simply operation, it is by no means easy. The operator should always have in mind what the shape of the tooth would be if it were cut across just below the gum line. The swell should be entirely taken off to about one-sixteenth of an inch below, leaving the sides parallel, or slightly larger at that point, so that when the band is passed over it will hug the neck tightly. If the tooth is larger near the cusp than below the gum, the band, when put on, instead of passing between the tooth and gum cuts into the gum, and when cemented the cement will present a rough, jagged surface which will be a constant source of irritation. An explorer should be used constantly, and trimming should continue as long as the least particle of enamel or the least ridge can be left. In all the teeth the bulk of the trimming will be on the mesial and distal surfaces, the swell being greater at those points.

Looking down on a lower molar after it has been shaped, it will be seen to be nearly square, with the corners rounded, being slightly wider at the mesial than at the distal side, owing to the anterior root being larger. The upper molars will be somewhat triangular, being broader on the buccal side because of the two buccal roots being larger than the palatal. Occasionally this may vary, but not often. In the bicuspid, cuspid, and laterals, the roots are egg-shaped, with the base toward the labial side, the bicuspid being long and narrow.

The shape of the centrals is always nearly a perfect triangle with rounded corners.

In any of the anterior teeth, if the enamel be entirely removed, the root will be of the proper shape to receive the band, as the greatest circumference of the body of the tooth is at the junction of the enamel with the dentin.

In opening a canal in such a tooth, it will be found that if its direction be not changed the pin will come wholly or partly under the facing, which necessitates the grinding away of the pin so as to leave it attached only to the thin floor of the cap, or grinding the facing. If in enlarging the canal the reamer be pressed toward the palatal side of the root, thus sloping the canal in that direction, and then, by bending the pin slightly, plenty of room will be left in front of it for the facing. The pin, too, should be long and heavy enough to support the crown. Very frequently a patient presents to have a crown reset, perhaps a large cuspid or central, having a pin not more than three-sixteenths or one-fourth of an inch in length and of No. 16 or 17 wire, where No. 13 or 14 of three-eighths or half inch in length could have been used. In opening the canal, the length should first be ascertained by passing a fine broach through the apical foramen, the pin then being made long enough and large enough to give all the strength required. Looking after details like these much time may be saved and success assured.

Dr. Peeso, International.

TIN FOILING A CAST.—Cover with No. 30 tin foil. Do not run foil too high up on the sides. It is best to have a narrow rim on inside of plate that is not made smooth by foil. It sticks better than if the foil runs clear up to top of plate. Before putting flask together rub the foil with French chalk, powdered, such as is found in shoe stores, and the foil will come off without any trouble after vulcanizing.

J. F. Reese, in Ohio Journal.

SMALL HELPS IN PRACTICE.

I have found it a very useful plan to soak a large piece of cotton wool thoroughly in chloro-percha solution, then with a gentle, steady heat evaporate the chloroform, and cut up the remaining hard mass into pieces of various sizes, they are then always ready for use as temporary dressings. When required for use the pellets are warmed over the spirit lamp so as to soften them, and then packed in the cavity; if required extra soft, as, for instance, when used to cover an arsenical dressing, they should be well heated, and then dipped into chloroform. I find these pellets also very useful for firmly wedging thin steel or German silver matrices against the walls and cervical edges of proximal cavities. In place of the Denham rubber cups I have been using small rounds of rubber-dam, and have found them very serviceable in all cases where the rubber cups were applicable. Of course, I do not advocate their use in long operations, such as large contour gold fillings, but for operations of medium length they are useful. They can be retained in position on the teeth, either by the clamp, or by tying with silk. The latter plan is, I think, preferable where possible, and, in the case of the lower teeth, the saliva ejector tube on the lingual side of the teeth, and a bibulous paper pad on the outside, under the rubber, will sufficiently evert the edges to give it a cup-like form. In the upper teeth, the tendency will, of course, be for the rubber to be pendent. Should the operator be called away in the middle of an operation, the teeth can always be kept perfectly dry by folding the edges of the rubber over the tops of the teeth, placing a tightly folded piece of bibulous paper over the rubber, and getting the patient to keep the mouth shut on the bibulous paper till the operator's return.

Another use I have put the rubber-dam to is cutting out India rubber bands for regulating and other purposes. It is annoying to want some bands in a hurry, and find there is not one fit to use; but, by means of steel punches of different sizes, obtainable from any leather shop, Nos. 6, 8, 9, 11, 13 and 15, I find the most useful sizes, and a flat leaden block, a fresh supply can at a moment's notice be punched out in the work-room either from thick or thin rubber-dam, just as one wants either strong or weak bands. I have tried cutting small bands from narrow rubber tubing, but did not find them so satisfactory as those punched from rubber-dam.

In cases of pain during the eruption of a wisdom tooth I

have found rapid relief follow the treatment of the gum with crystals of carbolic acid, dipping small pieces of cotton wool in the melted crystals and a little cocain, and then packing them between the erupting tooth and the gum, and also touching the surface of the gum with the carbolic acid and cocain. The patient can himself carry on the same treatment at home by touching the gum three or four or more times daily with a small piece of cotton wool twisted round the point of some fine instrument and dipped in a solution of carbolic crystals and cocain dissolved in alcohol; this treatment is, I think, better than lancing or excising the gum over the coming tooth, as in lancing the gum a cicatrix is apt to form, rendering a second attack much more troublesome; and in excising, with the gum so exquisitely sensitive as it very often is, the operation is apt to be rather unpleasantly painful for the patient.

A. T. Coucher, Journ. Brit. Asso.

ALLOYS.

The following extract from the pen of Dr. Black is being widely circulated:

"I do not care how you mix your alloys for filling, provided certain rules are employed. The first rule is this: the more tin you have the less trituration you should give it. The more silver you have the more trituration it demands, for the reason that the alloys with large proportions of tin dissolve in mercury much quicker than alloys with small proportions of tin. You should not manipulate or chop up your alloy in your cavity with your instrument. After you have once squeezed it out, you want direct compression of it," etc.

In our opinion it is most unfortunate that Dr. Black is considered by so many as an authority on the subject of amalgam. We cheerfully accord to Dr. Black our homage in many departments of dental science, but his advice as given above, and much else that he has written on the same subject, we consider incorrect and unscientific. In this extract he first says: "I do not care how you mix your alloys for filling," and then goes on to direct how the "trituration" should be made. Now, we do not believe that trituration is the proper method of mixing the metals composing an alloy when preparing it for a filling. Any method of pulverizing, or grinding, whether in a mortar or in the palm of the hand, is, we believe, prejudicial to the perfectness of the fill-

ing when finally completed. Instead of "trituration," the mercury and alloy should be vigorously shaken for a few moments in a mixing tube, and thus every particle of the amalgam is thoroughly coated with the mercury without grinding or pulverizing; this enables the alloy to be introduced into the cavity without the pulverizing process, which should, so far as possible, only be done while pressing and malleting into the cavity where it is to remain. With this method, scientists who have spent years in experimentation have found that the results are better than when the grinding process is used, and the uniformity of the amalgamation (a desirable matter) is secured with shaking in the mixing tube.

Dr. Black further says: "After you have once squeezed it out, you want direct compression of it." We desire to again ask, as we have often done through the pages of this journal, why put in mercury that has to be "squeezed out?" It is not necessary, and with every globule of mercury so expressed goes part of the silver, tin, platinum, copper, gold, or whatever is in the combination, and you will have left a mass that will behave in a way that has been proved to be uncertain. The proper method is to put in the amount of mercury that will be taken up under pressure, with none to be "expressed." *Ed. Western Journal.*

HEALTH "DON'TS."

Don't neglect your house-drains, nor the drainage about your house. The first condition of family health is a dry and sweet atmosphere. With dry walls, a dry cellar, and drains that carry off refuse without letting in foul gases, half the battle for good health is won.

Don't let your wells or springs be infected by drainage or from other causes. Pure drinking water is indispensable for health at home or anywhere.

Don't keep the sun out of your living and sleeping-rooms. Sunlight is absolutely necessary for a right condition of the atmosphere that we breathe and for our bodily well-being.

Don't sleep in the same flannels that you wear during the day.

Don't wear thin socks or light-soled shoes in cold or wet weather.

Don't catch cold. Catching cold is much more preventable than is generally supposed. A person in good physical condi-

tion is not liable to colds, and will not fall a victim to them unless he is grossly careless. Keep the feet warm and dry, the head cool, the bowels and chest well protected; avoid exposure with an empty stomach; take care not to cool off too rapidly when heated; keep out of draughts; wear flannels; and with the exercise of a little common sense in various emergencies, colds will be rare. If colds were a penal offense, we should soon find a way to prevent them.

Don't neglect personal cleanliness, but use the bath with moderation and in accordance with your general health. The daily cold bath is right enough with the rugged, but it is a great tax on the vitality of persons not in the best of health, and should be abandoned if the results are not favorable; tepid water used instead. Each man in these things should be a judge for himself; that which is excellent for one is often hurtful for another.

Don't have much confidence in the curative nature of drugs.

The above is from the *Phrenological Journal*, which adds: Remember that Dr. Good Habits, Dr. Diet, and Dr. Exercise are the best doctors in the world. *Scientific American.*

TO INCREASE THE STRENGTH OF CROSS-PIN TEETH.

We frequently like to increase the strength of a cross-pin tooth in some way rather than to show so much gold over cutting edge of tooth, which is nearly always disliked by both patient and operator; but in doing this we often crack the porcelain. They are, also, much more liable to break and cause us no little trouble in repairing. Now, the weak point is across the tooth where the pins are, and 'tis here you want an increase of tooth body, and in most teeth we buy they are thinner here than elsewhere, and the presence of the pin adds to their weakness. To increase the strength of such a tooth simply take any light color, low fusing porcelain body you may have and bake same on back of tooth till you have it very much oval in shape, leaving the mere points of pins exposed, if the case you are working will permit of this much fullness. The longer the pins are the heavier you may make the porcelain backing. To back up such a tooth with gold is better done by swaging, and a swaged backing always fits better. After you have fused your porcelain nicely over back of facing, take the tooth and press it into moldin to make a die. The tooth must be lifted out with care lest you

spoil your impression; and to do this apply a drop of hot sticky wax on tooth, and touch a wood point into it, and hold till cool, then you can lift straight out without spoiling any edges. It is important to punch the holes in your backing just where they should be at the same time you swage, and to do this take two short pieces of steel wire, about same size of pins in tooth, and place them in impression where they are indicated by imprint of other pins and leave them. You are now ready to pour your metal for die. After getting die, trim pins down just short enough to have them puncture the gold through, then swage your backing, using 22 karat gold, about 30 to 32 gage. This method increases the strength of your tooth in two ways: First, by an increased amount of tooth body, and second, the oval-shaped backing relieves the strain at what would otherwise be the weak point, across the pin.

R. D. Griffis, Tex. Dental Journal.

PROSTHETICS.

J. G. Templeton, A.M., D.D.S., Pittsburg.

The greatest and most needed improvement in our profession to-day is in the line of prosthetics. In this age of progress of the arts and sciences of which so much has been said and written, and which we like to apply and hear applied to our profession, we incline to think we can justly boast of our progress in everything else.

But alas, when we see wherever we go so many evidences of the low standard of this branch of dentistry, such disfigurement, such utter failure of any artistic skill without the appearance of any effort to restore the features. These false teeth are grinning at us at every turn. False did we say? Yes, false teeth everywhere; on the street, in the car, at church and in the social gathering. Their false appearance asserts itself like a horrible ghost, while the unsuspecting victim seems to enjoy their hideousness. Many of these miserable looking so-called substitutes have the magnificent hue or shade of well-watered skim milk, and looking about as much like human teeth as a row of small white beans set in the shape of a horseshoe.

If the poet or the musician could furnish nothing better their occupation would soon be like Othello's. What is needed is a systematic effort to instruct the people, that they may know what prosthetic dentistry can do for them. When they know or realize

what an artistic denture is, there will be no difficulty in receiving ample compensation for it. No wonder artificial plates bring such a low price. They all look alike. Those placed in the mouths of old people being taken from the same job lot as those inserted for the lass of eighteen summers, and for this reason the more intelligent people have a perfect horror of them, and do not want to pay much for them. Any dentist who has practiced for any length of time knows what a marvelous change can be made in the features of a patient by removing an illy adapted plate and substituting for it one well adapted in all its requirements.

Review.

METHOD OF OPERATING.

Gold cylinders, the length of which correspond to the cross-axis of the cavity, are laid on the bottom and sides and pressed to place by bibulous paper folded once, or as many times as will correspond with the work in hand; and soft linen cut into strips is to be used in like manner without folding, and in its preparation must always be cut, never torn. After the gold has been pressed to place under paper by "plugging pliers" (a special form is best), the ends of the cylinders are turned over and around the cavity, between the tooth and the matrix, or the first cylinders may be placed and adapted under the bibulous paper, the edges of these turned over the border of the cavity at the cervix, and the matrix then applied as described, pressing against the cylinders, the operation being continued by the use of mat gold and malleted to place with the paper upon the gold, followed after its removal with proper small, smooth points until all parts of the boundary, as you progress, are filled without the instrument coming in contact with tooth-structure. After the enamel has been thus protected, to a greater or less degree, not being so essential as with dentin, the cohesive gold can be added wherever the masticating surface or contour occurs.

When one or more of the walls are broken, a matrix becomes a necessity, and here planished copper or German silver works best with me—always fitting it to the individual case. This may be done by soft soldering the ends or using the silk ligature, which I generally prefer, winding it round and round the matrix to its width, which comes to the bulbous portion of the tooth only. To planished copper, which is rendered so pliable and dead by annealing, I give the preference for making all kinds of matrices.

This method of operating, I believe, is in direct line with the latest discovery in histological research in its relation with the several anatomical parts of tooth-structure, both mechanically and physically related, and as a protection from the micro-germ environment. Thus do we find non-cohesive or soft gold laid in lamina in juxtaposition against dentin and enamel, in contradistinction to small pieces being added cohesively in retainers, to be no veneer, but of better grain, and being opposite in all its relations as a tooth-preserver, both physically and mechanically.

H. C. Register, in International.

SOME MISTAKES IN CROWN- AND BRIDGE-WORK.

It is always best to contour the crown as nearly natural as possible, and if there is much space on each side of the root, exaggerate the contour so as to fill at the occlusal surface.

A common error is to crown a tooth with a living pulp. In the first place a tooth with a living pulp cannot be properly trimmed so as to make the crown fit at the gum line where it should fit, without greatly torturing your patient, and after the work is finished it is only a question of a short time until the pulp dies, then the crown must be removed and repairs made, which is a great deal more work than to destroy the pulp in the first place and fill the root and avoid all this trouble. Then you can trim the tooth so as to make the crown fit.

We sometimes try to have one tooth do the work of two or more, which is very apt to get us into trouble if we do not have some support at the other end. You have probably all seen the ill effects of making a large bridge with one or both ends unsupported, save as it rests on the gum, which must give way in time and cause the failure of the bridge.

Another and quite common and sometimes quite serious mistake is not to have sufficient solder or thickness of gold where the dummies join the pier of a long bridge. It has been my sad experience to be compelled to remove several bridges to repair a break at this point. There is a great strain on a long bridge from mastication, and the dummies and piers must be well and thoroughly united to give sufficient strength.

Another error is to use gold of too light a gage and without reinforcing the cusps in some way, and to use too low a karat of solder, because you are more apt to burn the gold.

There is no necessity of soldering facings in crown- or

bridge-work. They can be riveted and in that way avoid heating and checking the facings. Then the color can be changed by using various colored cements back of them.

In porcelain work we should never allow any of the porcelain to extend over the band, as the film of porcelain is apt to check and pull off and spoils the looks of the work.

It is a mistake to put on a Logan crown, or any crown, without a band or part of a band unless the root is unusually strong, as there is great danger of splitting the root.

In taking an impression and bite for a crown it is unnecessary to take them separate, and is more reliable to use nothing but plaster. After the band is in place, mix the plaster as for an impression, then take a little on the end of the mixing spatula and plaster it over the band and adjoining teeth, then have the patient close the teeth and hold them firm until the plaster sets, then you have both impression and bite, which can be varnished and placed in an articulating frame as any other bite.

Dr. B. D. Wikoff, in Dental Review.

THE CLINIC.

E. P. Beadles, D.D.S., Danville, Va.

Ocular demonstration is the best teacher. When a child sees a thing he will remember it easier than if only told about it. Men are simply grown-up children. A desire to learn something new is the foundation on which all our dental associations rest. The clinic has been the favorite method of imparting knowledge. Many attend the annual meeting for the clinic alone. They can read the papers and discussions in the journals; but cannot see the operations. This being true, the very best methods for conducting clinics should be devised. It is evident that the plans which have been in use by most of our societies have served their day. With a small number present, each man may be able to see what is going on; with a large number present nobody gets any satisfaction, the operator is crowded and worried, often failing to do himself justice.

The idea should be, not to have so many clinics, not so many operators; but good ones. Some men can teach, others cannot. There is a secret in being able to impart knowledge, to explain a thing so that the hearer may go home and perform the thing for himself. If those who have our clinics in charge will select a

few good men of known experience as operators and with ability to tell what they know, and will carry out the following rules, success will be theirs.

1. Have provided only one chair, and have that placed on a raised platform near the president's seat.
2. Have only one clinic in progress at one time.
3. Let the society be in regular session during the clinic, with the president and other officers in their places.
4. Let each operator furnish beforehand to the manager of the clinic, a list of whatever he needs to carry out his work.
5. Have placed on the platform a good blackboard.

Now with the members in their places the clinician is introduced and his intended operation announced. With the patient in the chair and with free use of the blackboard, he explains fully what he intends to do. At a given time those who wish to examine the case are allowed to come up, one or two at a time; this over, the operator proceeds with his work. If it will consume some time another subject may be taken up by the association, business transacted or a paper read, with the understanding that the operator can have the attention of the members whenever he desires it.

We are not students at college and do not need to see all operations right through to be able to do them; a suggestion, an illustration, an explanation may be all that is needed in many cases, or a question asked and answered when all can hear at once. The manager will be able to do his work with greater satisfaction, having only one clinic on hand at a time. By the old plan he is at the beck and call of every operator, and is wanted in a dozen places at once. But, possibly, the most important point covered by the adoption of this plan will be the effect on the operator. As it is now, good men often refuse to clinic, well knowing the difficulties under which they must labor. The operator knows that at best he can only explain his method to a few, and perchance the man next to him may be showing something very novel, and has the "crowd." The first operator has spent time and trouble to get ready, and is showing something really valuable, but there is no one to see it. He completes his case in silence, steals off out of sight, wishing "he hadn't."

Atlanta Dental Journal.

Let us have clinics, but let them be intelligent and business-like; and let there be fair play to operator and students.

LESSONS OF SELF-CULTURE.

Eugene L. Didier.

Of the numerous examples of self-culture, the illustrious Washington is a marked example. His fine, vigorous, practical mind was not trammelled by the useless learning of the schools. His education began at what was called "an old field school-house," was completed before he had advanced more than a few years in his teens, and was entirely different from the long course of studies that are now deemed necessary for a young man of his rank in life. He never attempted the dead languages, nor any of the 'ologies and apologies for an education which in these days unfit the student for the practical duties of life. Yet Washington was called to the grandest destiny ever given to a human being; and that he performed his part well is the universal verdict of the world.

Patrick Henry, who set the ball of the revolution moving, and thus started that mighty movement which has resulted in this magnificent Republic, was sent to a country school, where he learned to read and write; his father then undertook his education, but he was more frequently seen with a gun on his shoulder, or a fishing-rod in his hand, than with a book. During those early, impressionable years, this born orator was studying nature, and meditating upon the complex problem of government; and when the time arrived for the display of his genius, he burst upon the world with an impetuosity that carried everything before it.

One of the best representatives of the sturdy Anglo-Saxon race was William Cobbett. He was the most powerful political writer of his time, and so vigorous were his attacks on obnoxious men and measures that Hazlett called him a fourth estate in the politics of England. His style is said to have the clearness of Swift, the naturalness of De Foe, with the picturesque, satirical description of Mandeville. He received the merest rudiments of education from his father, who was ignorant, and could, therefore, teach his son very little. After young Cobbett learned to read, he became a lover of books, and once spent his last shilling in buying a copy of "The Tale of a Tub." By hard study and incessant application, he taught himself grammar, and mastered the English language. His grandfather was a day laborer; his father a small farmer; and William, in his youth, followed the plough. His education was received in the fields, and he looked back to this in after-life with gratitude. For lessons from nature are far more instructive than from books.

RESTORATION OF BICUSPIDS.

One of the most common accidents which dentists are called on to repair is the upper bicuspid from which either the buccal or palatal face has broken, often to the gum line, carrying away frequently both proximal fillings. Such teeth are usually pulpless, and the remaining portions of the crown can be retained, and the contour restored either with amalgam or with a combination of amalgam and porcelain as follows:

If the buccal wall is still standing, a strong metal pin should be cemented into the root and left nearly as long as the finished palatal portion is designed to be. All soft and frail edges having been cut away, a temporary band matrix is selected, of a size suitable to represent the size of the proper contour of the finished tooth, and is put in place outside of and around the broken crown and the pin, care being taken to fit the matrix accurately to the gum line above the break.

The ring matrix is then filled carefully and solidly with amalgam, the first pieces white plastic, to enter all inequalities about the pin and broken tooth, but hard and dry amalgam should be used when the operation nears completion. The ring should be left on the tooth till fully hard, when it should be removed and the amalgam shaped and polished.

Should the buccal wall instead of the palatin be broken off, a cross pin porcelain facing of the proper size and color should be selected and ground to fit the buccal aspect of the tooth just under the edge of the gum. The pins of the porcelain are now fitted into a narrow scrap of platinum, or gold and platinum, and soldered with eighteen karat solder. This cross-piece of metal is attached to the pins near the ends at a sufficient distance from the facing to allow a screw to pass through the square opening thus made. The screw is then cemented into the root, the porcelain placed in its proper position with its joined pins encircling the screw, and a temporary band matrix of proper size is used to surround the various parts of this combination.

Enumerating these parts from without inward, there are the steel band, the porcelain facing, the screw, the palatal wall of the natural tooth, and again the steel matrix. Amalgam is then packed into the matrix and all about the pins of the porcelain, the screw is secured far up in the root and into the inequalities of the palatal wall of the tooth.

When the matrix is removed the next day and the amalgam finished, the result is pleasing.

Dr. E. L. Davenport, in International.

EXAMINING BOARDS *vs.* COLLEGES.Editorial in *International*.

The Examining Boards, as at present constituted in the several States, were not organized without considerable opposition from legislative bodies and the public at large; but this gradually succumbed to the pressure, until now they exist in all the States of the Union. In the majority they hold a supervising power over the colleges. These, while chartered to confer the right to practice have had that power rendered a nullity and their diplomas relegated to a value equivalent to an ordinary certificate. There is as yet no method devised to prove the competency of the men who constitute the boards, nor is there any means provided to restrain them from rendering unjust decisions. They are practically a law to themselves, with no supervising power to control their actions. They are placed in these positions mainly to re-examine graduates from colleges. This presumes that their training is in degree superior to that of those who have given their lives to the work of educating students. If the boards are not thus superior to the teachers in colleges, why are they given these positions of responsibility? Without reflecting on the qualifications of any set of men, it is manifestly unreasonable to suppose that dentists who have been long years in active practice, with no close connections with college work, and with no time and little disposition for extended professional culture, should be gifted beyond those who have had opportunities for just the opposite training. It is unreasonable, nay, more, it is absurd, to place men, however good their motives may be, as regulators of the work of men their superiors in professional education. The manager of a large manufacturing establishment would not for a moment think of making a superintendent out of an unskilled artisan, and have him judge the product. Yet this is exactly what our laws are doing. Dr. Arrington very forcibly puts this part of the question when he says, "I also honestly believe the dental college faculties, as a whole, are infinitely more competent and better prepared to judge of the qualifications requisite for successful practice and ultimate rendering of good service to the honor and credit of the profession, than are the majority of the dentists who compose Dental Examining Boards."

The action of some of the State Boards in turning down graduates by wholesale has aroused an indignant response from the more intelligent of the dental profession. It is very clear that the college from which these young men graduated could not

have been wilfully negligent of their duty, nor could the young men, after their years of study and work have been incapable of practice in such numbers as have been reported. It is very evident that some State Boards have overdone the work and have justly excited the suspicion that they were not as eager to improve the curriculum of colleges as they were to prevent additions to their number in practice. If the latter be the reason, and the evidence is very strong to support it, then the profession should demand the repeal of all laws that permit such a brutal interference with the efforts of young men to engage in an honorable calling.

Whether this has been the case or not, the power exists, and who is there to control it? The decision of these boards is final, and the graduates have no chance of appeal, and having none, they must sacrifice three years of time, labor, and oftentimes money earned through great privations, to the power of a few selfish men, for it is a waste of words to say that such action is based upon a desire to elevate the profession.

The range of subjects entering into the curriculum of dental colleges at the present time stands in no relation to that of a period of twenty years ago. The men who compose the boards of the several States, with scarcely any exception, are incapable of examining on the subjects as now taught. Chemistry if taught at all, was through lectures and by experiments made by the incumbent of the chair. Bacteriology was an unknown study even five years ago. The study of anatomy was practically confined to the head. Physiology was a run over, as the young men were supposed to require but a superficial knowledge in this direction. Histology, general and special, was not taught in laboratories. If the dental student wished a knowledge of surgery, he had to acquire it outside of the dental college. Even in the supposed essential branches of prothesis and operative dentistry there have been radical advances, and to such an extent that the graduate of a few years back feels as he surveys the field like a door rusting on its hinges, and longs to renew college associations. Dental pathology and materia medica were taught a few years ago in a most perfunctory manner; now the relations to general pathology and therapeutics are made of vital importance. That some schools endeavored to fulfil all these requirements is acknowledged, but they were very exceptional and their work bore no relation to the present standard of requirements. If this statement be true, and all conversant with the facts know it to be true, how can these men undertake to traverse the knowledge gained by the students who have covered this entire work?

The result of all this is that young men are subjected, in many instances, to the examination of men ignorant, first of the proper methods of examination, and equally ignorant of the subjects they are supposed to examine on and render a verdict for the good or ill of the poor victims of unreasonable law.

It is not to be understood that it is thought all law is undesirable. It is recognized that the statutes of the several States, however imperfectly formed, have had in degree a beneficial effect in stirring educators to a more healthful activity, and it would, perhaps, be unwise to repeal all laws on dentistry and medicine as has been suggested in certain quarters; but if the present laws were amended so that no further re-examinations were permitted, and diplomas of one State were to be accepted in every State of the Union, and the suggestions of Dr. Arrington in regard to censors be added, it is thought we might move along for some years in a greater degree of harmony than exists at present.

ARISTO-PARAFFIN WAX FOR ROOT-CANALS.

Harry B. Hickman, D.D.S., Philadelphia, Pa.

Mix the aristol and paraffin by application of slight heat and by means of a spatula till the mass assumes a dirty straw color. This mixture will not deteriorate with age, and can be kept in glass or in a pasteboard box. Paraffin wax as found in commerce is impure hydrocarbon, but it will not volatilize unless raised to a high temperature.

After the dam has been applied and the canal has been sterilized and prepared as usual, it should be desiccated thoroughly by use of chloroform or alcohol with hot-air syringe, or by use of a root-canal drier. When this has been accomplished, roll a cone of aristo-paraffin and place in the canal, and with a heated root-drier, or other pointed instrument, touch the wax, when it will fill the canal by capillary attraction.

When the canal is filled, to all appearances, the material can be forced up through the apical foramen by means of a round-head burnisher and a pledget of cotton or bibulous paper, or by twisting cotton around the sharp point of a plugger, when by the slight irritation evinced by the patient for the instant it will be known that the canal is filled. Experiments with this preparation on extracted teeth demonstrate through what surprisingly minute foramen it can be forced.

The advantage of using aristo-paraffin, where the foramen is large, is that, if it is forced through the foramen, it will not produce sufficient irritation to cause or continue an abscess, but be absorbed by the tissues, which advantage can hardly be claimed, righteously, for any other filling of the same value in other respects. When the canal is thus filled the bottom of the cavity should be covered with cement, and the filling completed as conditions indicate.

Between sixty and seventy cases of abscessed roots have been treated and filled in this manner, from one to three years' standing, and there has been but one recurrence of apical tumor, which was caused by an impacted third molar.

Eight months ago, in examining a lady's mouth, the lower second molar, which was filled with amalgam, was found to be abscessed. According to her story there had been a fistula on her gum below the tooth for nine years.

In cleansing the root there appeared through the fistulous opening a substance resembling what the pathologists term blue pus, which made me hesitate about trying to save the tooth. Instead of extracting, the filling was removed and the canals treated in the usual manner with carbolic acid, creosote, oil of cinnamon, etc., but the fistula remained closed for a few days only. Finally it was decided to fill the root-canals and treat the abscess through the fistula. In forcing aristo-paraffin through the distal canal, there appeared through the fistulous opening, on the point of wax, a particle of amalgam, which had been causing the whole trouble.

After filling the crown, as much paraffin as possible was removed from the fistula, and in a few days it closed up. Since then there has been no recurrence of either pain or fistula.

Cosmos.

All must confess, and it must be regretted, that some dental colleges (owing chiefly, I believe, to the great increase of numbers and striving for patronage) have been too indifferent about qualifications and right preparation of young graduates to commence practice, and have graduated and turned loose on communities incompetent men, some that never can practice with skill and credit to the profession and justice to the public. But such cases proportionately are small, unquestionably the exception, and not the rule—a feature in all professions, and not more frequent or common with dentistry than medicine, law, and the sacred ministry.

B. F. Arrington, in International.

THE CHIEF DUTY OF THE DENTIST.

Dr. D. M. Cattell.

One of the first requisites of the dentist is to restore lost portions of the teeth. I think the ideal requirement of the dentist is to prevent loss. The prophylactic treatment is the first important point. In the future great things are expected in that line. Carving seems to be an interesting idea whether modeling in clay, bone or other substance. It has been known for several years that students may study dental anatomy from a book by the day, the week, the month, and still not know very much about the subject. Study until the small hours of the morning and learn what they can from the text about a tooth, and yet when they come up for examination they fail. The little points of information they have acquired by memory have disappeared; they cannot remember the "landmarks;" nothing has been placed before their mind's eye sufficient to hold the attention long enough for a picture to be properly printed. Students have tried for a considerable time freehand drawing. It helps wonderfully to fix the attention of the student, but when it comes to molding a tooth in clay, or carving one in ivory, it is a greater benefit. When a student, be he old or young, takes a piece of clay and with a form before him, whether it be one face of a tooth, as in a picture, or the tooth itself as a model, and carves and molds the clay into something resembling the model before him, he will have retained in his mind some of the interesting "landmarks" made by his own hands. He has produced it by his own craft, and in doing so, he has worked on the same lines that they do so successfully in the idiotic asylums and manual training schools—he has trained his fingers as well as his eye and mind. The mind will follow the act of the hand more readily and retain an image of what the hand has done in its memory more distinctly than if it simply sees and does nothing toward building, so that in building up or in shaping with the hand, the retention of the mind of these particular points is much more vivid, and has not only a "bird's-eye" view of it, but a decided and more permanent impression made there that the mind is not likely to forget. How many years since did it become the custom in dental societies to have a blackboard? Some of the older members can remember the time when if a blackboard was talked about by any one he would be laughed at, and members would express themselves at not wanting grammar school work here. Now, we have a blackboard, and by means of different colors of chalk

we can complete a picture which the audience can see and understand that the speaker intends to convey. A few years ago we could not do this. To-day by means of the blackboard we can draw the picture of a cavity, with a deep recession of undercut, construct an angle or cut a step that any of us would know the significance of. Freehand drawing should go with the instruction in modeling. There have been few exhibitions where clay has been brought before the dentists publicly.

A LESSON OF COURAGE AND SUCCESS.

Franklin, the master spirit of his age in practical science, finished his school education before he was eleven years of age, but his real education ended only with his life. He was always adding to his knowledge, whether at home or abroad, on land or at sea. Nothing was too small or too large for the broad and comprehensive mind of this practical philosopher; he did not disdain to write papers on warming and ventilating rooms, on the prevention of colds, on smoky chimneys, on cleaning streets, on seasickness, while engaged in the loftiest political and philosophical speculations. Franklin was not only an honor to America, but to the human race. Born in the humblest rank of life he succeeded by his own unaided efforts, and by extraordinary perseverance, in attaining the highest position in science and philosophy, and winning the respect and admiration of the old and new world. The son of a tallow-chandler, he became the friend of Washington and the companion of kings and princes.

When a boy his father used to repeat to him this saying of Solomon's, from Proverbs: "Seest thou a man diligent in his business? He shall stand before kings." Franklin was diligent in his business, and lived to stand in the presence of five kings, one of whom, Louis XVI, King of France, gave him his picture set around with diamonds. The good which Franklin did has lived after him, and shall continue to live till this world ceases to be; he invented the lightning-rod; he discovered that electricity and lightning are the same; he started the first public library in America (the Philadelphia Library, which still exists in splendid vigor); he set on foot the first fire company; he helped to establish the first academy in Philadelphia (now the University of Pennsylvania); he helped to found the first hospital in that city; he signed, and helped to write the Declaration of Independence. This is a superb record for a self-cultured man, who went to school for only two years.

Self Culture.

DISEASE OF THE ANTRUM.

Dr. H. A. Cross.

I have a case in my practice which I think is of sufficient interest to briefly relate, hoping that I may get some light on the subject from some of the members present. It is a case of disease of the antrum. I extracted an upper first molar, the one that caused the trouble, and burred through into the antrum, made a tube, and before inserting it I cut it a little longer than I considered necessary, resulting in quite a liberal discharge from the antrum through the nares, as well as through the opening made for drainage. In preparing a drainage tube I cut two slots lengthwise in the end of the tube that was to be inserted into the antrum, then cut the tube about three-sixteenths of an inch longer than would be necessary to reach the floor of the antrum, then placed the tube in position, having the slotted end passed up through the floor of the antrum about three-sixteenths of an inch, depending on the slots as well as the open end of the tube for drainage, and secured the tube in position by tying it to the second molar. Having taken what I considered to be extra precaution in establishing good drainage, I have been surprised on each occasion when the patient has called for further treatment, which consists of syringing out the antrum, in noticing that there is some obstruction above the tube which prevents the wash from passing into and through the antrum till after I have passed a wire up through the tube, which comes in contact with a soft yielding veil, which is easily punctured by the wire. After puncturing this membranous veil I find no difficulty in forcing the wash with the syringe right through the antrum and out of the nares. The membranous veil referred to appears to be at some distance, say half an inch or more, above the upper end of the drainage tube, and I have been considering the advisability of removing the tube and inserting a longer one.

The question arises, if I insert a longer tube, one long enough to pass through the obstruction referred to, would I not endanger good drainage by passing the end of the tube so far above the floor of the antrum?

My first operation on this patient was about a week ago, and she has been much relieved by the treatments which I have given her, yet I do not feel satisfied in having to use the wire every time in order to get satisfactory results from syringing.

Review.

ART IN DENTISTRY.

Dr. G. V. Black.

The artistic features of dentistry are always interesting. I am in the habit of saving roots that have been broken very low, where the crown of the upper cuspid was all gone, the root hollowed out and the gums grown into it. It is twelve years ago that I first worked on such a case. I crowded the gum back, found a thin shell in the lingual, constructed a porcelain tooth something of the usual form with gold band, the only portion of which could be made effective, but I made it fit where the tooth had been formerly on a labial, and extended it to the root, not over it, because I could not get as good a fit as possible in this way. I extended the post under the remaining portion of the root, giving me a better opportunity, and mounted the crown with cement. The last summer the crown moved for the first time; the patient was a near neighbor and ran in to ask me if the crown had not moved, and on examination I found it had. I had some trouble in trying to remove it; the platinum pin had been bent by some severe usage, allowing the tooth to move. I got away the pin, made three wires, and soldered it together with gold and platinum, and reset the same crown in the same position and in the same way with this pin, which was much stronger than the original pin, and is doing excellent service to-day.

So we may, if we are careful in selecting our cases judiciously and in operating carefully, save very many of these roots that are being condemned, making and mounting useful teeth on them, whether it be porcelain or gold. I think gold still has a place. We should not turn our attention exclusively to porcelain but each of us perhaps will succeed best along certain lines that seem most adaptable to our particular hand, so that I would not condemn the use of porcelain by those who are artists in this work, neither should porcelain workers condemn the use of gold by those who are artists in gold in crowning and bridging. My notion is that good crowns and bridges can be made with either material.

As to the finish of fillings the profession has been very lax, and particularly as to the form of fillings the form of the restoration, particularly that portion of it relating to the restoration of the interproximate space. This is as important with amalgam fillings as it is with gold fillings, and it is as important in making crowns as it is in making fillings. We are meeting with crowns

continually that are well formed and well mounted, but the preservation of the interproximate space has been neglected, and the crowns become failures on that account. Food lodges between the crown and a tooth on this side or that, the gum is pushed away, made sore, becomes irritated, the interdental membrane of the tooth becomes diseased and the tooth is lost on that account purely from neglect in preserving or maintaining proper form of the interproximate space. It is here that art in dentistry in those cases is to pay you. It is an important matter in all our work that we properly protect the soft tissues between these teeth, and these are protected by getting proper form to the contact of the teeth one with the other, as well as proper form to the interproximate space.

As I grow older and observe more I am inclined to attribute more to mind and less to instinct. We find in many animals actions that we cannot ascribe wholly to instinct, yet they are governed perhaps in some degree by instinct. I remember distinctly seeing a child throw up its hands and scream the first time the clock struck, after it was born. It was in fright at the striking of that clock. Maybe you would term that instinct. The next time the clock struck there was some fright, but the third time it failed to frighten the child. Was that instinct? Not entirely, I think. There is the instinct of self-preservation perhaps that often runs away with the mental faculties. *Review.*

SOME PRACTICAL HINTS.

Compiled by J. P. Harper, D.D.S., St. Louis, Mo.

[Dr. Harper will be remembered by many as the author of a popular dental Digest published some years ago.]

Pulpitis, Acute.—Apply dam, dry, and remove cause; if pain ceases and pulp not exposed, and tooth has ached but a few hours, cap pulp and fill temporarily; if patient is of nervous temperament or anemic, or the tooth has ached more than five hours, devitalize.

Pulpitis, Chronic.—Devitalize.

Chronic Alveolar Abscess with Fistula.—Clean canal with hydrozone; force tepid water into tooth and out through fistula, follow with hydrozone; dry canal and force carbolic acid, 95 per cent through tooth and fistula, dry and fill.

Chronic Alveolar Abscess with Fistula but no Access to Fistula Through Tooth.—Treat tooth as for putrescent canal.

Treat abscess with syringe through fistula with tepid water, followed with hydrozone without pressure, then carbolic acid, 95 per cent. Repeat in six days if not healed. If necessary, enlarge opening through process to apex of root with bur.

Chronic Alveolar Abscess Without Fistula.—1. Clean cavity, open chamber and canals, clean canals with hydrozone, dry, insert disinfectant for four days, seal temporarily and puncture.

2. Test with hydrozone, dry with alcohol, force 95 per cent carbolic acid through roots into abscess, dry with cotton and fill root.

Acute Abscess.—Lance gum over apex of root; syringe abscess with warm water, follow with hydrozone without pressure, then 3 per cent carbolic acid, and dismiss patient until inflammation subsides. Then treat as for abscess with fistula or blind abscess as indicated.

Putrescent Canal, Only.—1. Place disinfectant in tooth, avoid use of broaches in canal, seal temporarily and puncture; dismiss patient for four days.

2. Clean canal with hydrozone, dry, insert dressing of essential oil, seal tight, and dismiss patient for one week.

3. Test with hydrozone, dry and fill roots.

Pyorrhea.—Remove with scalers all deposits around neck of tooth, and all calcareous deposits from root of tooth under the gums. Syringe pockets with hydrozone, and apply dressing of trichloracetic acid 5 per cent. Repeat in three days. Continued presence of pus will indicate that all deposits have not been removed from root. If teeth are loose, ligate. A mouth-wash of hydrozone is essential—the latter to be diluted with two to four parts of distilled water to one part of hydrozone.

Bleaching.—Apply dam. Remove root filling from canal slightly beyond neck of tooth. Remove decomposed and discolored dentin, saturate cavity and canal with hydrozone and dry thoroughly with hot air. Repeat saturation and drying till tooth is desired shade. Fill canal and cavity with white cement; finish with gold.

Southern Dental Journal.

Dr. Vasseur, of Marseilles, swallowed a bone, which lodged in his throat. Thinking it still there, an operation was about to be undertaken, when the rays were utilized, and showed that the foreign body had passed on, leaving only its irritation behind. An operation was thus obviated.

Review.

DIFFICULT ROOT-FILLING.

Dr. H. A. Cross.

I had a case last spring in the mouth of a young lady for whom I was doing some work. It was the root of an upper bicuspid decayed away up into the socket over one-quarter of an inch above the gum line. I told the patient that I would like to try the experiment of making a porcelain crown for that root, and that if I should not succeed I would make no charge for my efforts. I cleansed the socket in the gum with hydrozone, then pressed warm gutta-percha into the socket to crowd the gum away to give me a view of, and access to, the remaining portion of the root, which I found to be very short, it being decayed far up into the socket, too short to band or crown in any ordinary way. I then took an impression with modeling composition, reproduced that in metal, made a die and counter-die, and swaged a platinum disk which fitted the end of the root, and extended down nearly to the surface of the gum. Through this disk I passed a platinum post, extending it up into the remaining portion of the root, and soldered the post to the disk with pure gold, and to this disk and post I constructed a porcelain crown, baked it, and set it with cement. The result was the restoration of the lost member with a crown which exactly matched the neighboring bicuspid. I saw the patient a few days since and made inquiry regarding the crown. I said to her, "What have you done with the crown." She replied, "I have it yet. It is fine and all right."

After this successful experiment of making a porcelain crown for a root that I have always regarded as past salvation, I made up my mind that I have in the past extracted a good many roots which might have been saved. In dealing with these short roots which were decayed far beneath the surface of the gum, we of the dental profession have been in the habit of saying to our patients, "It is very unfortunate, but we will have to extract them as they are too far gone to be saved," which necessitated making a bridge which was expensive, or by making a plate which was far worse practice. Since making the porcelain crown for the patient just referred to, I have made one for another patient, which is so firm and natural looking that I do not think any one would suspect its being other than a natural tooth if he were to inspect the mouth of this patient without an intimation of there being any artificial crowns in the mouth. In this case it was an upper cuspid root which had decayed fully five-

sixteenths of an inch above the surface of the gum. In making these crowns for short roots I make the disk so that it does not come quite to the surface of the gum, so that when the crown is completed and set to place, the gum comes in contact with the porcelain all around, thus hiding the metal disk at all points.

THE NATIONAL ASSOCIATION OF DENTAL EXAMINERS.

Editorial in International.

One thing is very evident, that the National Association of Dental Examiners has passed the stage of tolerance, and if the State Boards would cease to send delegates to it, one cause of a vast deal of trouble would be removed. As it stands to-day it is a positive menace to the colleges of the country, and should be abated without any reservations as an obstruction to healthy dental progress. When it is remembered that this body has as part of its membership men not connected with any State Boards, the absurdity of their pretending to control the work of the colleges becomes painfully apparent. When, also, one of these non-representative members is Secretary of the Committee on Dental Colleges, the work of this body becomes absolutely farcical. The report of their proceedings would furnish most amusing reading were it not of serious moment to the parties most interested.

The time has arrived when this subject should be met with some decided action, for if colleges and students are to be the victims of an irresponsible national organization these should know the worst, and the earlier this information is forthcoming the better it will be for all concerned.

There are, unfortunately, a few men of prominence as educators in dentistry, who sit supinely in our conventions, or openly defend all law however administered. The time is coming, if not already here, when this kind of spirit will not be tolerated. It bodes no good to a profession when ignorance and intolerance commands, and it is equally unfortunate when intelligence succumbs to this power and apologizes or supports it. Let the colleges of this country demand to be considered on this question of State Boards, and in order to be heard let them insist on being represented on every State Board, and not as now, completely excluded. It is an insult to every man connected with colleges to assume that they could not honestly examine students; but this is not surprising, in view of the fact that re-examination practically

assumes that every professor is unworthy of confidence, and his decision, as to the standing of a student not entitled to any consideration.

We have had time for discussion, and it has profited nothing. The time has come when the colleges of the United States must resist to the extreme, if necessary, these encroachments upon their just rights. It is due these educational institutions that at the next meeting of the National Association of Dental Faculties this subject should assume a very large share of attention, and it should be seriously considered whether some means should not be taken to prevent this growing interference with the legal rights of the schools.

TREATING CHILDREN'S TEETH.

Prof. T. E. Weeks.

Bear in mind that the first object is to do as little, occupy as little time and inflict as little pain and inconvenience on the patient as possible in getting good results. We may hesitate to ask that these little patients be sent to us, but it should be done for the good of the child. It is from experience that I speak of the necessity and the duty we owe to our patrons and the community, not to hesitate to urge on parents that they bring their children to us. I think when people do us the courtesy, or pay us the compliment, of entrusting their own teeth to our care, they will understand this when the subject is presented to them in the proper manner, and that they will accept the suggestion in the spirit in which it is intended.

Some think that we must not do these things for fear people will think we are begging for business. However, this argument can be raised on a higher plane than that—it can be placed on the plane of humanity—saving suffering, contributing to the improvement of mastication, and the subsequent improvement of the whole physical being of the child. There is no one who carries this to a greater extent than Dr. Bonwill, who insists that the parents shall bring their children to him when they are three years old, and from that time at regular intervals, and he boasts that he never has any cases of irregularity, except of a hereditary nature, or any of those ills which arise from a lack of care of the teeth.

There is no necessity to call your attention to an aseptic condition of the mouth more than to mention that where decayed teeth exist, that there will be an unhygienic condition of the

mouth, a septic condition, the fluids will be vitated, and all attending evils will follow in its train.

The handling of children is a great study, and there can no rule be laid down. A mother can come for a protracted operation and bring the child with her, especially if she is a good patient, but as a rule children should not be permitted to witness operations on another.

Review.

METHOD OF FORMING A RELIEF FOR HARD PLACES IN THE MOUTH.

Outline on the cast with pencil the location of the hard places, and cover them with No. 60 tin foil. In an ordinary case, with a hard ridge down the center, I use about five thicknesses—less if the soft parts are not very soft, and more if they are extremely soft. In the latter I let three thicknesses extend to and beyond the posterior margin of the plate, the other pieces stopping one-fourth inch back from the edge. To do away with an abrupt edge (one of the objectionable features of the old air chamber), each layer is made of a different size, the largest piece is cut first, the second of the same size, and reduced by trimming off the edges, and so on. The smallest piece is applied first to the cast, and the others successively, so that the steps are not perceptible, the tin foil being secured to the cast by varnish, unless the vulcanized base-plate is made by West's method; in this the rubber cement is all that is necessary.

W. E. Walker, in Texas Journal.

In the asylums, if they take an imbecile to broaden his mind, they do not give him books. If his mental caliber is nil, he has first to learn to do one thing at a time with his hands, and these are made to move in certain definite lines, time and time again, until the action has become a habit with the muscle. In the continued manual training of that individual, the mental window is slowly opened, so to speak, and the subject becomes sufficiently conscious to know what he has to do, and so the work goes on. This idea has been worked on and thought out by professors and teachers in these asylums until it has become an established fact that the mind follows the hand or muscle action. This principle may be applied to all teaching.

Dr. Cattell, in Review.

UNNECESSARY SACRIFICE OF DENTAL PULPS.

Dr. W. A. Siddall.

There is nothing in dentistry which requires more skill and thought and good judgment than to properly place anchorage for a filling without danger to the pulp. To be able to tell where the pulp is in a tooth, and so place anchorage that the filling will not be injurious to the life of the pulp, requires the greatest judgment.

There are so many things to be considered—the age of the patient, the density of the tooth, any peculiar shape of the tooth or cavity. We must look out for any unusual location of the pulp or unusual length of the horns of the pulp.

I believe that there are a large number of pulps sacrificed unnecessarily by a lack of care and judgment in the preparation of cavities.

There is no question but that the use of hot air in connection with a certain medicament for sensitive dentin, a few years ago, resulted in the death of a great many pulps, and we should be careful to know what effect any new treatment for the same purpose may have on the pulp.

It is often a difficult thing to diagnose an exposed or nearly exposed pulp, and especially is this so when the dentin is insensible to pain. I would not underestimate the value of a method whereby the dentin can be desensitized, but would urge that unusual care be exercised in its use.

Ohio Dental Journal.

A SMALL POINT.—In capping small exposures, or when putting cement into an excessively sensitive cavity, I am accustomed to use a stiff paste of white oxid of zinc and oil of cloves next the pulp or dentin. I found it difficult to carry this paste to the exact spot, and leave it there, owing to its strong inclination to stick to the instrument used in depositing it.

Finally I almost by accident discovered that if the paste were made into a little ball, that this could be carried to the cavity and placed exactly where needed, or spread over the exact amount of surface required, by using a bit of spunk in the pliers, as carrier and spreader; the spunk coming away almost clean, or at most with only a little oil on it. This is a little point, but since I developed it it has given me much satisfaction.

J. H. Hughes, D.D.S., Goshen, Indiana, in Review.

HARDENING STEEL.

Metallurgists now think they know why a piece of red-hot tool steel becomes flint hard when suddenly cooled in water. For years they have been satisfied with the explanation that the shock drove the molecules of the steel into closer contact, hence the hardness, but this theory was completely destroyed by the fact that the volume of the hardened steel was greater than that of the unhardened material. After five years' search the metallurgical department of the Sheffield Technical School has solved substantially this difficult problem. It had been necessary to employ very intricate physical apparatus, the object of which was to measure accurately what seemed a paradox, namely, how much hotter a piece of steel became on cooling, and how much cooler it became on heating. These phenomena were due to the formation or dissociation of compounds within the steel itself. The result of the researches showed, almost beyond doubt, that the almost diamond hardness of suddenly cooled steel was due to the presence of a remarkable sub-carbid of iron, and that the action of tempering was due to the fact that far below red heat this compound decomposed and diluted the mass with soft iron. The permanent magnetism of steel depended on the amount present of this compound.

Dr. Leffman: Steel gets larger when hardened. A steel rod that will pass easily in a ring when soft will not pass when hardened. There are several theories concerning tempering. I do not know what is the present theory among engineers. One is that the hardening causes the carbon to remain in the iron. There is no chance for the carbon, in solution, to escape. It is in the molecules of the iron, and is forced to remain. There is no perfectly demonstrated theory, however, as to the hardening of steel. There has been one suggestion, that the carbon remains because the steel is chilled so quickly that it does not have a chance to escape. By chilling it quickly it is actually forced to remain in its place.

Dr. Head: That is a very interesting theory; and still more interesting in the light of the fact that if one should take a small steel wire and heat to a cherry red, when it cools in the atmosphere it will not get soft, the atmosphere cooling it so quickly that it still has some temper; while if that wire is heated to a cherry red and then plunged into water, the moment it loses its red it is found to be soft. An old mechanic taught me this years ago. This fact is certainly incompatible with the theory spoken of by Dr. Leffman.

International.

PRACTICAL POINTS.

By Mrs. J. M. Walker, Bay St. Louis, Mississippi.

ROOT-CANAL FILLING IN DECIDUOUS TEETH.

Fill the canals with powdered iodoform mixed with campho-phenique.
W. E. Grant, Dental Digest.

Render aseptic with peroxid, and oil of cloves and carbolic acid, half and half. Fill canals with shreds of cotton impregnated with aristol dissolved in chloroform.

B. J. De Vries, Dental Register.

Use a paste made of oxid of zinc and aristol equal parts, with enough oil of cassia and vaseline to make a soft putty-like paste. Work into canals with a hot instrument wrapped with a wisp of cotton.

Chas. Keyes, International Dental Journal.

I obtain very satisfactory results by packing the canal as tightly as possible with cotton and iodoform paste.

Dr. S. H. Guilford, International Dental Journal.

Wind gold foil on a fine broach; then pull the foil one-quarter inch beyond end of broach, and roll in fingers to a fine point with which canal can be filled.

Dr. Hill, International Dental Journal.

ROOT-CANAL FILLING.

When the canals are of good size, and can be made easily accessible, I have found no substance so good for filling the apical portion as small cones of gold foil malleted into place, the remainder being filled with gutta-percha or oxichlorid of zinc.

Louis Jack, International Dental Journal.

Cut soft gold foil in very thin strips, fold it once and cut into very small pieces not larger than half a pin's head. For a root-canal plugger take a Donaldson nerve extractor, snip off the hook and flatten the end. Measure the depth of the canal and mark it on the instrument with a bit of rubber-dam slipped on it. With this instrument pick up one of the very small pieces of gold and carry it steadily to the apex and pack with the plugger described. The rubber-dam index will tell you when you have got to the apex. When you know the apex is well filled any other material will answer for the rest of the canal.

N. T. Shields, Dental Cosmos.

Shape rods of lead, zinc or tin to fit, and imbed in canal in a paste of tincture of benzoin and oxid of zinc.

J. L. Williams, Dental Cosmos.

A quick and effective root filling is made with an aluminum point which can also be used to cleanse the root-canal. The aluminum being soft can easily be bent and nicked at the right point where it is to break off.

Dr. Dunn, Sr., Dental Weekly.

With a smooth broach pass into the canal some oxiphosphate or oxichlorid of zinc, lining it to the apex. Have ready a tapered piece of lead wire, which pass into the canal, forcing it home with a plugger. The lead can be compressed and will force the plastic into the remotest parts of the canal. The lead salts are antiseptic, and, if the canal has been properly prepared and sterilized, pericementitis is not likely to ensue.

F. D. Price, Dominion Dental Journal.

In very small canals I have been using Gramm's fine copper points. First pump in chloro-percha, made from chloroform, to which has been added twenty-six per cent formalin.

Elgin Mawhinney, Dental Review.

In case of perforation, if the canal is accessible, whittle a piece of wood to the length and size of canal—trying it in to ascertain that it does fit; then make the point a little smaller and wrap around it a piece of very thin, well annealed platinum foil. Dry the canal and coat the platinum with thin varnish. Then push the platinized wood point to the end of the canal and gently remove the wooden point, leaving the platinum lining in the canal. Blow in hot-air to hasten the hardening of the varnish, and proceed to fill.

Editor American Dental Weekly.

With Donaldson nerve broach work in up to apex as much creamy oxiphosphate as possible. Then drive in a splinter of orange or cedar wood trimmed smaller than the canal, and leave it there.

Dr. Allen, International Dental Journal.

Cedar wood is peculiarly well adapted for filling root-canals as it is very soft laterally and adapts itself readily to any irregularity in the canal, while it is very hard when dried.

Dr. Seabury, International Dental Journal.

Trim a Japanese wooden toothpick, dip with chloro-percha and use as a piston to force the chloro-percha into the root-canal, leaving the stick in the canal, filling it positively and most perfectly. In case of subsequent trouble it is readily removed with pliers.

Geo. A. McMullen, Dental Review.

Trim a small, fine needle of orange or some other wood, made sterile by proper treatment. Roll a small quantity of Abbey's soft gold foil around the tiny end and then tap it into the apical third of the canal, after which the remaining portion can be filled with any of the reputable root fillings desired except tea, lead or amalgam. The latter are factors in the discoloration of pulpless teeth, when placed in the roots.

J. Y. Crawford, International Dental Journal.

With hypodermic syringe fill root-canal with chloroform and immediately insert gutta-percha points.

R. T. Oliver, Ohio Dental Journal.

Chloro-percha and asbestos fibers form an indestructible root-canal filling which can be packed firmly, and which can be introduced into canals too fine to admit a gutta-percha cone.

Carl E. Klotz, Ohio Dental Journal.

If the canals and the opening at the apex are very large, wrap barbed gold wire with red gutta-percha, putting it in and out several times, getting an impression of the canal by which to gauge the proper quantity of gutta-percha required to fill it completely.

S. G. Perry, International Dental Journal.

The foramen, in tortuous root-canals, is more readily reached with gutta-percha reduced to a cream with eucalyptus oil than with chloro-percha. In case of large foramen, the eucalyptus is soothing to the tissues beyond the foramen, rather than irritating, as is the case with chloroform.

H. C. West, Dental Review.

Gutta-percha will cling more closely if the canal is washed with ammonia water one-half per cent dilution.

A. W. Harlan, Dental Review.

After the cavities are prepared, I use chloroform, then liquid gutta-percha, then gutta-percha points, then hot air and pack solidly.

R. R. Andrews, Ohio Dental Journal.

Roll red gutta-percha into a long, tapering point. Working some chloroform into the canal, take the cone in a pair of delicate forceps, hold it a moment or so in chloroform so that the outside is softened or partially dissolved, then press the cone cold into the canal. The cone, while soft and sticky on the outside, is, as a whole, stiff, elastic and yielding, and quite obliterates the space.

L. D. Shepard, International Dental Journal.

With syringe inject a drop or two of a saturated solution of hydro-naphthol in chloroform. Follow with gutta-percha cones till the canal is filled. Simple, clean, antiseptic, effective.

S. Freeman, International Dental Journal.

Cleanse the canals thoroughly, both mechanically and chemically, with an antiseptic oil, absorbing surplus with antiseptic cotton; follow with alcohol, hot air, and finally a hot root-canal drier. Select a gutta-percha cone, roll to fit the canal; lubricate canal walls with hot eucalyptus, pump in chloro-percha, and introduce the cone, using care to exclude the air.

Elgin Mawhinney, Dental Review.

Taper a suitable sized gold wire or broach and sharpen the point. Force cautiously through the end of the canal, just enough to prick a little, of which the patient will give warning. Mark the exact length of the canal and withdraw. File off the tiny sharpened point; insert again and force to the end of the root, making sure there is no pain. Remove again and file almost through the wire, one-sixteenth of an inch from the end. Force home in the canal again and twist off the wire, leaving in position the filed-off end, thus securely sealing the apex with a royal metal. Fill the remainder of the canal as preferred.

J. H. Daly, International Dental Journal.

In molar roots use copper wire with chloro-percha. The therapeutic action of the sulfate of copper, the hermetic sealing of the gutta-percha, combined with the preserving qualities of chloroform, make this a very desirable nerve canal filling.

W. J. Morrison, Dental Headlight.

Form a cone-shaped piece of lead or fine-grained wood and saturate in some antiseptic fluid. Coat the surface with oxiphosphate and press firmly home. By this method the space is completely obliterated and the ends of the tubuli closed.

J. Taft, International Dental Journal.

Powdered resin, dissolved in alcohol, makes an antiseptic, insoluble root-canal filling.

D. V. Beacock, in Ohio Dental Journal.

R. Rosin 3 parts.
Pharmacopœa resin ointment..... 1 part.
Mixed with lycopodium..... 2 parts.

And a sufficient amount of hydrarg perchloride to make it 1-1000. Antiseptic, tough, easily introduced and easily removed.

T. C. Reese, British Journal.

R.—Chloroform 3ss
Gutta-percha,
Resin.....āā 3j

Let stand two or three days before using. Pump into root-canal and then force in gutta-percha points.

M. D. Goble, International Dental Journal.

ITEMS.

After we have a thorough conception and understanding of normal occlusion we have accomplished a wonderful amount in possibilities leading to artistic dentistry.

Theo. Menges, in Review.

* * *

A slip-noose can be put on the lower front teeth with one hand, while the rubber-dam is held down with the other; get the slip-knots ready first, draw them tight, and they will hold as long as wanted.

J. G. Templeton, in Review.

* * *

With regard to crown- and bridge-work, if we want to be up-to-date we have to do porcelain work. It is the coming bridge. If it is properly made, it is stronger, cleaner, and much more artistic, which is something to be desired in everything we do.

Robert Good, in Review.

* * *

In finishing plates, always trim the rim low over the bicus-pids, leaving it high as can be worn over the cuspids and the same over and back of the second molars. Do not file rim to a knife-like edge, slightly bevel inside of rim at the top, extending down about three-sixteenths of an inch.

J. G. Templeton, in Review.

* * *

Why? Can you tell why it is that gum sections are not used when the patient in talking or laughing shows the gum? A shrewd guess is that it is very much easier to use the plain teeth, or the dentist has not the skill to make a respectable set with the gum sections.

Western Journal.

* * *

When we as a people, as fathers and mothers, cease to wander from the true heart of nature, cease to please the eye and the palate in the selection of our food; when we can abandon the whimsical fancies which govern the selection of our diet, and when we can act as intelligently as a people so highly educated as we are should act in making wise selections of food that will sufficiently nourish all tissues of the body alike, then as we come back to the true heart of nature, we shall be healthy, wealthy and wise.

Dr. Storvell, in Cosmos.

The dental student who continually finds fault with the college, with its management and the efforts of his instructors is usually the one who does not seize the opportunity afforded, and who forgets that, after all, everything depends upon himself.

Western Journal.

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To solder a cap on a gold tube intended for an artificial crown, lay the cap on about a tablespoonful of finely cut asbestos, put the tube in place on the cap, drop in the solder and a little powdered borax, then blow a yellow flame all around the tube till the solder flows, and there will be no danger of melting the plate.

J. G. Templeton, in Review.

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I find sectional impressions a failure; I have never seen an accurate fit made from a sectional impression. If I want a perfect impression, or as nearly perfect as can be procured, I use plaster of Paris, pure and simple, place it in the mouth and remove it before thoroughly crystallized; it thus breaks easily and a series of clean-cut breaks can be replaced accurately.

Dr. Lowry, in Review.

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VULCANIT SCRAPER.—Take an old case knife of good metal and grind the edge square, make the blade rounding at point. This makes a scraper that will cut better than any, and is easily sharpened by holding it square against the stone. It works like a piece of glass shaving wood. It is best to break off about two-thirds or half of the blade before sharpening.

J. F. Rees, in Ohio Journal.

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HOW TO VULCANIZE.—To successfully vulcanize a rubber piece, the first thing to observe is that the pins of the artificial teeth are free of wax; then pack the rubber around the pins first with the greatest care; fill in the palatin surface with sufficient rubber to allow of small excess; provide plenty of gates for its escape; close the flask slowly with clean hot water or dry heat, the latter preferred; when closing the flask, see that it is under continual pressure at all times; place the flask in the vulcanizer before it cools; the water should just cover the flask, any more than this is unnecessary; heat up slowly to the proper temperature; allow it to remain at this point, without variation, for fifty-five minutes; cool down and remove. Never allow a piece to remain in the vulcanizer over night.

Dental News.

Just think of the many men recorded, and some we have known, and are now living, when commencing the practice of dentistry, medicine, law, and the ministry, what weakness, seemingly, and what little hope for them, and what a poor prospect for good to mankind through their labors; but time developed that there was will-power, manhood and tact, backed by ambition and perseverance, which are moving factors in life-work that will accomplish much, and developments that will surprise and delight us.

B. F. Arrington, in International.

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Dr. Barrett, in speaking before the College Faculties' Association said: "He who assumes to arm the young men of our country for the battle of life, to fit them and equip them for an honorable career, simply that he may minister to his own good, who takes the teacher's place and ascends the instructor's rostrum from selfish motives is a worse hypocrite than the preacher whose every-day life belies his sermons." *Catching's Dental Weekly.*

* * *

The dental colleges are now receiving new material, on which depends the future of the dental profession. The colleges appreciating this, and refusing students who are not possessed of the proper preliminary qualifications, are the ones against which no charges can in future be made. The day has gone when everybody is welcome to the ranks. Advancement can be assured to dentistry by looking after the matriculants. *Western Journal.*

* * *

The Trans-Mississippi Exposition, in 1898, promises to be a wonder. An immense fund has been raised for its success. The National Dental Association members need have no fear that Omaha cannot accommodate all who attend. Similar doubts were expressed when the American Association decided to go to Excelsior Springs near Kansas City a few years ago, but the result was a successful gathering, and perfect satisfaction with the accommodations. The Western meetings at Minneapolis and Excelsior were among the best in the history of the American Association.

Western Journal.

* * *

In my first manipulation of gold I inserted it by hand pressure, and did this for a year or two during my early practice. The conviction began to come to me that I was using more force on my fillings for a certain degree of density with hand pressure than I could get by the mallet blow. These experiments may disprove my impressions, that with a given force by the mallet

and hand pressure we get a better condensation with the mallet than we do by hand pressure. To my mind it may be illustrated in this way: If we are going to drive a nail into a board suppose we put a hammer on the nail and press upon it slowly, it would require enormous pressure to force that nail into the board, but if we strike the nail with a blow in it goes. I think this is a good way to illustrate the relation between these two processes. So I believe we can get a greater degree of density to a filling, with less aggregate force with the mallet than we can with hand pressure.

Dr. C. N. Johnson, in Review.

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The value of photo-micrography cannot be over-estimated as an illustrative method in the study of histology and pathology. The great advantage over drawings is that the mind of the artist cannot influence his pictures. In drawings, the artist, whether intentionally or unintentionally, gives his views instead of the actual tissue involved. The difficulties encountered in this work are greatly over-estimated, as any one who can intelligently manage the microscope and has a limited knowledge of photography, can make photo-micrographs. The apparatus can be bought very cheap. The ordinary photographic plate of any good standard is all that is necessary.

Dr. Hinman, in Register.

* * *

Not every new method is a good method, nor every old method a bad one. The science of to-day is not infallible. They posed as learned and scientific men, who cruelly made Galileo blind, but we now know that in matters of science he was far in advance of those who condemned him to perpetual darkness. Look back a little and see how often those who refused to modify their practice to the new obligations imposed by the latest voicing of so-called science have wisely so done. The time was, when those who used gold as a base for artificial dentures were for so doing, by those who presumed to be oracles of dental science, denounced as quacks. Porcelain artificial teeth were denounced as roundly as vulcanite has been. Pulp devitalization has been denounced as murder. But a few years ago the latest voicing of bacteriological science required the immediate extraction of all teeth to any serious extent effected by pyorrhœa; later we are taught that this is all wrong, they should never be removed but by the skilful use of cunningly devised instruments, thoroughly scraped till the last infinitesimal atom of calcareous deposit has been removed.

Wm. H. Trucman, in Review.

There is nothing that will pay us better than to be artistic in everything we undertake. Personally, I polish every filling I put in the mouth. I do not care what it is, and I make my patients pay for it. I give them to understand that it is necessary that it should be done, and that is the reason I do it. When patients understand that you are working for their benefit and not your own they are willing to pay for what you do for them.

Dr. Schwartz, in Review.

* * *

It is easier to take clay and manipulate it than it is to sit down and whittle bone. Men who have not gone through this work of operative technics will find clay a much easier material to work on than to cut a toothbrush handle. In all of the dental colleges we have good men who teach operative technics, and those who have learned to carve for fillings will find it to be invaluable to them in porcelain work, just as much so as modeling in clay.

Dr. Schwartz, in Review.

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PLASTER IMPRESSIONS AND LOOSE TEETH.—W. Dunn, D.D.S., Florence, Italy, says: "When taking plaster impressions, it is often difficult to put a layer of wax all round loose or isolated teeth to prevent their being dragged out. A simple method, where the tooth is fairly even all the way up, is to slip a piece of soft-rubber tubing over it, and take plaster impression as usual."

Catching's Dental Weekly.

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In place of Examining Boards I will suggest that each State create a Board of Censors, to whom shall be reported any and all cases of malpractice or improper professional conduct, and before whom the accused may and shall confront his accusers, and, if convicted, shall be suspended or barred the privilege to practice in the State in which the offense was committed; and the Secretary of the Board of Censors shall be required to report proceedings and ruling, with seal of office, to every other board in the several States, who shall place on file and furnish copy to Secretary of State Dental Association to be read at ensuing meeting. By such a procedure the unworthy could be rightly dealt with and the public protected more securely, and the profession sustained better than by the present provision and arrangement of Examining Boards.

B. F. Arrington, in International.

EDITORIAL.

The sun shines brightly this New Year's Day. The past has been a struggling year, but this year dawns gloriously. That was a sad day for us when our dear wife was auctioned off for four thousand dollars. We had cherished her from her infancy. She had grown to be a stately matron, head and shoulders above all her associates, comely and fascinating. But now another has her, and though he has painted her with gaudy colors and heavy garments, and tried to disguise her, I lament her going.

But a BRIEF little maiden has come to me; to cheer the morning, I have put off my weeds and kissed her. I will cherish her as my own, and send her out with monthly messages to tell my innermost thoughts to my brethren.

HAVE OR DO SOMETHING NEW THAT WILL BE APPRECIATED.

To have only a common stock in trade, and to do only what every one else can do, and are doing, is not profitable. Our ingenuity must devise some new thing, or some new and better way of doing some old thing, if we would become popular and successful.

A farmer out West heard of a species of corn grown in Russia which was evidently better than any grown here. Hundreds of others had heard the same thing, but took no action. He did. He procured some, and, cultivating it, filled his pockets with gold before his neighbors waked up to the enterprise. With his native corn 60 bushels was a good yield; with this he has from 125 to 150 bushels to the acre, and corn the millers clamor for, while the seed he can spare sells at a fabulous price. He has something new that is appreciated; that is all.

But the most interesting yield of corn comes from an old,

well-sealed pot, hidden away in a dry mound by aboriginal Indians, and found by a farmer by the name of Waggy, in Madison county, Indiana. This find shows that corn has deteriorated. The finder might have only set it on his mantel as a curiosity, as many another would have done, not dreaming that such kernels would grow. "Whoever heard of such a thing?" Instead he looked on it as something old to be made new. At any rate he would do his best to bring to life what had been so long hidden in the tomb. He planted them in his garden, and was soon surprised in the result. "The corn," says a correspondent of the *Chicago Record*, "grew marvelously fast, and as it developed it threw out new mysteries almost daily, till to-day the stalks are ten to twelve feet in height, and are somewhat on the order of a tree, being as thick as a man's wrist at the ground. Three feet from the ground they shoot out three long, palm-like leaves. The leaves are heavy and very solid, resembling a cactus leaf. Some of them are five feet long, from tip to tip. These are the only leaves on the stalk. About two feet farther up are the ears of corn. Many stalks bear six ears each, and none has fewer than four ears. At this rate it is figured that the average yield to the acre would be about 250 bushels. Above the ears the stalk continues three or four feet, and is topped with an elaborate tassel. The husks surrounding the ears are very heavy, and as the corn matures they break and curl back, revealing a firm, yellow-grained ear. The grains are solid and are exceptionally good for feeding. The roots of the plant are very long, and bury themselves deep in the ground. While other corn was suffering from the drought this year, the prehistoric corn was green and healthy."

Shall we call this an accident? It is just such fortuitous circumstances which, in some shape and character, are as golden opportunities pressing themselves on our attention, but which, with most of us, are thrust aside. We have, ever and anon, some new thought or device or "air castle," which, if seized and made practical with persistence and enthusiasm, would bring us great advantage.

There is now a scientific farmer who is experimenting in crossing and otherwise improving grains, as flowers and fruits are

improved. The betterment of their size and qualities are so encouraging that some of the governments of Europe are largely favoring the work. Oh, for more such intelligent, practical experimenters. Farmers, like too many dentists, work only in grooves made for them by others. The secret of marked success in any business is to keep every faculty alert, that we may know a good thing when we see it, and produce a good thing that the world is calling for. The needs are many and great, but original thinkers and investigators are few.

A quarryman, hearing of the power of compressed water, sent for a compound pump, and drilling a hole as for a blast by powder or dynamite, filled it with water and plugged it up, leaving a minute metal tube in the plug. Connecting the nozzle of his pump with this tube, he began to pump into the filled drill hole more and more water, though only drop by drop. The pressure of the confined water ran up to tons on tons. Finally, without noise or shock, the huge rock split. His success was complete. Turning its application to coal mining, he had the pleasure of seeing great blocks of coal loosened and lifted from their bed, and split into any form, without smashing the coal or filling the mine with smoke or dust, as it is with powder, and at very much less cost of time and money. This man only did a little thinking. What others had always done in his line did not satisfy him. He wanted something better than had ever been seen, and by a little ingenuity he found it.

These remarks and instances are quite applicable to our work as dentists. We can produce something new if we set ourselves about it, or find some new and better process for doing something that is old.

Our friend, Dr. Bonwill, one of the greatest geniuses in the profession, told me the truth, many years ago, when he said I was no genius, either at work or devices for work. Yet what I have not been able to accomplish by the intuition of genius, I have tried to do as a close student and as an indomitable worker. If I have achieved anything, either at college or in the office, it has been by hard work—actually flying at a new thought lest I might lose it, and being willing to spend any amount of time and study

and labor on anything I believed might improve my practice and purse.

I remember thinking over this idea of having or doing something new that would be appreciated by patrons, when, forty years ago, I chanced to read in a dental journal that some one was contouring gold fillings by using cohesive gold. It gave but a hint of the process or of the character of the gold; but how it stimulated me to do likewise! I was ashamed not to be able to do what others could do. By dint of much practice I succeeded, not only in contouring my gold fillings, but in building up an entire tooth with foil of cohesive gold. I had but few patients who would pay the price, but the few I did such work for were my best advertisers, and the fact that I could do such work gave me the reputation of an extraordinary workman, so that all branches of my business was much increased.

Then, too, as my reputation for being a good workman increased, I increased my prices for all kinds of work, and I am inclined to believe that this, too, increased my practice, especially among the better and richer classes. I had the cream of the business, and I always did like cream.

At that time nothing but plates of silver or gold were used for artificial teeth, except in a few of the larger cities, where porcelain was used by a few.

One day a young man, who had come to Winona, Minn., where I was practicing, to buy wheat for a Boston firm, said to me he had been for a time in a dental office where they mounted teeth on rubber, and he believed he could teach me how to do it. I gave him a hundred and fifty dollars to show me how and for a pot to cook them in. In three months I was making them at \$20.00 a set. They fitted so much better than metal, were so much lighter and comfortable, and so much cheaper than gold, that I soon had a perfect rush for them. I had a new thing that was appreciated, and, like contour filling, I was in advance of my fellow dentists.

When chloroform came into vogue I went a long distance to acquaint myself with its use, and used it successfully long before others about me touched it. So in after years with gas.

I sometimes think it is a good thing not to be a genius. I see so many geniuses resting by the roadside while plodders pass on to higher ground, that I am half glad I am a plodder. These geniuses do everything so easily they do not seem to know what it is to struggle. They simply dance and sing and toss their books and tools about, and have a good time, while we poor mortals have to sweat and delve and blunder on, scarcely having time to look up, it is so hard to keep up with these merry fellows; yet we get there, and get there to stay, while many of these smart fellows fall out by the way crippled, or lazy, or discouraged with life's work. I believe we have all seen more geniuses than plodders stranded; and more plodders than geniuses making a success of life. The genius astonishes us with his leaps and bounds and wonderful feats at first, but so often disappear in oblivion, while the plodder, though slow and awkward at first, gains strength and skill with his slow but sure growth.

I suppose the reason for all this is, that, in the nature of things, there must be struggle, and discipline, and hard work to produce continuity of purpose, vigorous growth and practical sense. The plodder butts against all odds, blind to impossibilities; and butts on, not knowing when he is defeated; and butts on when he has accomplished his purpose, not knowing when he should be satisfied. And in and by all this he is gaining vigor and power and position which is making him commander of forces and men, and commander of himself.

TELLING OF WHAT YOU ARE SUCCESSFUL IN.

When we visit a successful dentist, it is natural to notice the character of his manipulations, to inquire about his methods, and to draw out of him the facts and theories which underlie his practice. But only a few can readily tell intelligently the details, and the how and why of what they do.

We presume this is the reason some of our most successful workmen are never seen in print, and are too backward to make speeches in our conventions.

Not long since we saw a dentist putting in a beautiful gold filling in a tooth that had been abscessed for years.

"Why," said I, "are you sure you have destroyed the abscess, and that it will never give further trouble?"

"An abscess once killed," he replied, "never reforms. I have no fears here, for everything is in a healthy condition."

"But do you succeed uniformly?"

"We succeed in nothing uniformly. An ulcerated surface may follow an abscess; and this is sometimes more difficult to treat than an abscess. But here, and generally, there is no ulcer. Therefore I fill this tooth in confidence of future success."

As the lady passed out, I said:

"I wish you would give the BRIEF your treatment of this tooth, and your treatment of abscesses generally."

"O," he replied, "I am no writer. Besides this treatment is so common, a description would be nothing new."

Nothing would induce him to give me a promise, though I am convinced from his reputation that he is as successful with the cure of abscesses as he professes to be. Yet, though this treatment was so easy to him, it is extremely difficult and perhaps impossible to many.

The trouble is, many of our successful workmen are not contented to give the bare plain essential facts, and they are not able to make a long, exhaustive scientific treatise, and so they say nothing. But if they could write elaborately, not half so many would read and profit by it as if stated in the common language and brevity of conversation. If there is anything the masses of dentists are on the lookout for in our magazines it is the every-day experience of our best workmen. And perhaps not the best in everything. Many dentists who are not counted among our great workmen are specially successful in some things, and it would be a blessing to have this known. Though it may not be strictly original but common to many, his manner of doing and telling, will enthuse and improve some who are unsuccessful.

Then, too, this telling our experience has a reactionary effect. The very putting it in methodical and intelligent form imprints all the little points of detail on our own minds, and so enters into and improves our future practice.

DEFINITENESS OF LITERARY PURSUITS.

It is a fine thing for every dentist to give a definite time each day to literary pursuits. An hour in the morning and as much every evening is not much, and when it becomes a habit, it is not difficult ; yet in the aggregate it amounts to a great deal.

The improvement will be not only what is learned during these two hours, but their lessons will be digested during the day. And it is not only the facts learned that are an advantage, but the study is a continual culture that expands and matures and sharpens the whole intellect.

Besides these two hours there are odd times during nearly every day that may be thus advantageously improved. It is perfectly astonishing how much time can be thus husbanded that is generally wasted. The gain of a single day or week or month may not seem to be much. But as we look back on a year thus wisely spent we shall have improved much ; and five years will show improvements that are wonderful.

No one who has submitted himself to such self-culture will ever regret the effort. This methodical study gives method and studiousness and improvement to all we do, and it improves and rounds out the whole character.

Spasmodic efforts are of little use. Half-hearted measures are of small account. The whole life must be put into it. The time set apart for study must be kept religiously. The study must be enthusiastically absorbing.

This constant plodding—this persistent persevering, indomitable sitcktoitiveness tells ; and it tells mightily in all that makes up character, and power, and a successful life.

Many dentists have little devices they would like to bring to the attention of our readers, who hardly care to take a definite space in the advertising columns. We will open an editorial page in our reading department for such, at the rate of thirty-five cents a line. Of course, those using advertising space will have the same privilege. This may be couched in our language or in that of the writer.

HOW TO BECOME AN EFFICIENT WRITER.

I know a dentist past middle age, who, though a blunderer in English composition, resolved to become an efficient writer. He bought all the books on the subject he could find, and studied the best authors. He made these his almost constant companions for years, and all this time he sought to reduce to practice what he studied. I have known him work at a single page of composition for hours, and even then put it aside for future improvement. One of the first essays he read at his State Association cost him over a week's solid work, and yet it was only four foolscap pages long. And during the reading of it he saw so many errors he became too ashamed of it to hand it to the secretary. It seems incredible that this was after more than a year's careful study and practice of English composition. He is now only a tolerable writer, though he has had many years of experience.

We do not give this incident to discourage others, but to encourage the most discouraging blunderer to persevere.



Father Patterson, of the *Great Western*, says he does not like the editorials of the BRIEF. Well, this is the third time in fifteen years he has complained of our puny efforts, yet Father Patterson lives and grones and kicks. And then, too, some of the other journals do not suit him. But they go on just as ever, forgetting that he has been appointed sensor of this whole fraternity of dental editors. Poor sore, sour soul! It will soon be asked: "Who killed Bobby Patterson?" And wee little birdies will have to chatter the sad requiem: "We killed Bobby Patterson. In his own nest he was king. Even his pretty little mate was charmed with his bright feathers. But he sought to pick at other nests, that they might look like his, and now poor Mrs. Bobby Lictum is a widow."

NOTES.

As oxiphosphate is improving in character it is coming more in use.

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Be especially careful that your cavities to be filled, either with gold or alloy, are dry.

* * *

We expect to be supplied, monthly, through Mr. John A. Saul, with all patents of interest to dentists.

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It does not cost much to line vulcanit plates with gold, yet by it they are made much better and more presentable.

* * *

Personal cleanliness, neatness and orderly appearance, with suavity, gentleness and sympathy, are winning traits.

* * *

To see some amalgam fillings—and some gold fillings, too—it is no wonder there are failures. One would suppose the manipulator was a mere child. It is too bad there are so many poor dentists and so few good ones.

* * *

Watts' crystal or sponge gold is a universal favorite. Some time since James Leslie, of Cincinnati, Ohio, brought out a somewhat similar gold. For all these years he has been indefatigable in his labors to supply the profession with the best that can be made.

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Our dental colleges give us many good dentists, but all our good dentists do not come from colleges. Merit should be our criterion, and merit should be recognized. So demerit should be condemned whether in college graduates or non-graduates.

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NORTHERN ILLINOIS DENTAL SOCIETY. — Officers, 1898 : President, C. B. Helm, Rockford ; Vice-President, Louis Ottofy, Chicago ; Secretary, James W. Cormany, Mt. Carroll ; Treasurer, M. R. Harned, Rockford ; Member Executive Committee, E. J. Perry, Chicago.

Slovenly work can be done with even gold; and beautiful work with amalgam and vulcanit if proper pains are taken. Dentists are too apt to slight work which does not bring them a high price, and then lay the blame for fault finding on the material instead of their inferior work.

* * *

GOLD CROWNS ON LIVE TEETH.—I saw an account of crowns on live teeth causing death of pulp by a prominent society talker. Now I do not believe any such thing, if the work is properly performed. During my practice of ten years I know of no crown on live tooth that has caused death of pulp. What is the opinion of the profession?

I. B. Archer.

* * *

It can no longer be said "there is little difference in amalgams." The strife with some manufacturers to see which can make it the cheapest, has flooded the market with much that is comparatively worthless. The efforts of Dr. Bonwill, Dr. Flagg, Dr. Palmer, and other superior manipulators and makers, have helped to keep up the standard of its quality. Now, it is not the lowest price alloy that is called for by reputable dentists, but the best in quality.

* * *

If teachers in our colleges must instruct by lectures, by all means let them speak extemporaneously and not from a written page. You want the eye of your auditor as well as his ear, and he wants your eye and the enthusiasm of your soul. Talk to him and he will listen and understand; read to him and you become monotonous and uninteresting, and his mind wanders.

* * *

What is reasonable and proper should be our standard of thinking and acting, not what is popular and common. Many things are customary which are the height of folly and inconsistency. We may make mistakes in judging, but if we bring everything to the standard of right and propriety, and adopt or reject accordingly, we shall not go far astray. It is this propensity to be and do and appear like those about us that bring us into the bondage of our own good sense.

* * *

DENTAL WAX.—Take of French chalk, 14 parts; gum kauri, 8 parts; and stearine, 4 parts. Melt the stearine on a water-bath, then add the finely powdered gum kauri in small quantities. When dissolved, sift in slowly the French chalk, and stir constantly till cold. The composition can be colored with carmine if desired.

Review.

FOR OUR PATIENTS.

THOMAS A. EDISON.

One of the most practical intellects of the age is that of Thomas A. Edison. He learned to read at his mother's knee, and like most of the world's workers, he early became fond of reading. He never went to school more than two months in his life. At twelve, he was earning his own living as a train boy on the Grand Trunk Railroad, running between Port Huron and Detroit. He sold papers, magazines, toys, fruits, etc. He made \$2,000 during the four years he was engaged in this occupation, all of which he gave to his parents. At twenty-two, he was tramping the streets of New York, without a cent in his pockets. Ten years later his wonderful inventive genius had made him rich and famous—his income was as large as that of the President of the United States, his name known over the whole civilized world; recognized as one of the most remarkable men of his age.

Let us glance, for a moment, at some of his inventions: By his automatic system of telegraphing, one thousand words a minute can be sent over a single wire; by his quadruplex method, four distinct and different messages pass over the wire at the same time; by the phonograph, all kinds of sounds are preserved, and may be reproduced ages hence; by the telephone sounds are conveyed over any distance; by the electric light, night can be changed into day. Within the memory of living men, the editor of the *English Quarterly Review* once gravely declared that he would "rather trust himself to the mercy of a Congreve rocket than ride on a railroad train moving at the rapid rate of eighteen miles an hour;" and when we know that we now ride in perfect safety sixty miles an hour, we can hardly venture to predict any limit to the marvelous inventive genius of Thomas A. Edison. Such wonders has he accomplished with electricity, that we naturally ask, "What next?" The genius of man is limitless. "Hundreds of discoveries are still to be made by men of trained and observant minds. The lightning of which we stand in awe is nothing more than what a lady might brush from her cat's back, or from her own hair with a brush. Science reveals to us two infinities: It begins in wonder and ends in wonder, and is the great angel of mercy devoting itself to the welfare of the race."

When we remember the great work that had been done in the world by Columbus, the discoverer; by Fulton, the inventor; by Peabody, the philanthropist; by Dickens, the novelist, and by many others, we should be encouraged to go on bravely with our own work, knowing that the world's workers have been and are men of self-culture.

E. L. Didier, in Self Culture.

THE HEROIC AMERICAN SPIRIT.

If asked to name the President of the United States who most truly represented the American spirit, Andrew Jackson should, undoubtedly, be mentioned. This remarkable man was the child of poor Irish immigrants. He was educated in a log hut in the pine woods of North Carolina, from which he went at the age of fourteen to fight in the Revolution. His education was such as any schoolboy in these days would be ashamed of, but he possessed a brave and unconquerable spirit. Left alone in the world before he was fifteen, by the death of his father, mother and brothers, he worked out his own destiny with indomitable pluck, and splendid success. Having only a limited knowledge of law, he boldly crossed the mountains into Tennessee, settled in Nashville, and fought his way to success at the bar; became a judge; a member of Congress; United States Senator, general in the War of 1812; the victorious commander in the battle of New Orleans; closing his public career as President of the United States during two eventful terms, in which he proved himself as great a statesman as he had already proved himself a born soldier.

General Jackson's life-long political antagonist, Henry Clay, was the son of a poor Baptist preacher in Virginia, who died when the future statesman was only five years old, leaving a widow and seven small children to shift for themselves. Under these circumstances, young Clay's education was of the scantiest kind, picked up in a log-cabin schoolhouse, under teachers who knew little, and could impart only the rudiments of English to their pupils. At the age of fifteen, he began the battle of life as a clerk in a small retail store in Richmond. He soon left the uncongenial employment, to accept a clerkship in the office of the clerk of the high court of chancery. Here he remained four years, when he commenced the study of law in the office of Robert Brooke, Attorney-General and afterwards Governor of Virginia. During these years he was fortunate enough to attract the favorable

notice of the celebrated Chancellor Wythe, who, becoming interested in the bright young man, directed his studies, and recommended to him the best books for acquiring a knowledge of the grammatical structure of the English language. After studying law a year, he was admitted to practice, though not yet twenty-one. He soon afterward removed to Lexington, Ky., where his eloquence, his frank and cordial manners, and winning address, in a few years, gained him a large practice and distinguished political honors, in his State and in the United States. Henry Clay's public career is familiar to most American readers. Let it suffice here to say that he became a popular idol, and for fifty years was regarded as the Cicero of America.

E. L. Didier, in Self Culture.

CHLOROFORM.—Chisholm states that during the twenty-eight years from the time of the introduction of chloroform there were only two deaths by its use in the Royal Infirmary at Edinburgh. During the last ten years of that period he estimates that there were 36,500 cases of chloroform anesthesia, with only one death. Elser, of Strasburg, had used chloroform 16,500 times without a single death. During the Crimean war chloroform was given 30,000 times, with but two recorded deaths. When it is remembered that in many of these cases it was given to men torn and mangled by shot and shell, and too often by unskilful assistants, we must hold this agent in high esteem. At the same time we must reiterate that its use in dental surgery should be strongly deprecated.

British Journal.

THE UNION COLLEGE OF PAINLESS DENTISTRY.—Shall we not give to this "college" the palm for liberality? See its advertisement: "Full set of teeth, 2 dols. In order to increase our clinic we want every man, woman and child in Chicago to have their mouths examined by the professors of this college. All your work will be done free until August 22. Teeth extracted without pain; teeth cleaned; silver fillings, soft fillings free! Easy payment plan. Union College of Painless Dentistry. Best equipped college in the world. Open nights and Sundays."

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ORIGINAL COMMUNICATIONS.

LITTLE THINGS IN GREAT THINGS.

Though we all look for great things, and for the most important features and most admirable qualities in great things, it is often the little things in great things and characters that are of the most importance, and the most important to know in judging of the whole value.

I was passing a mighty oak, when I spoke with much enthusiasm to a friend of its wonderful strength, its astonishing vitality, and its majestic proportions.

"Do you see yonder extremity of a twig curling its leaves?" said he. "Look carefully, and here and there you will see others. Observe also those little emits crawling in and out of the bark at places. These are little things compared with the general appearance of vigor; for the vast foliage and grand trunk speak of long life and still greater growth; but these little blemishes tell *me* as clearly as though I could look clear through it from root to top, that at heart it is rotten."

Only two years after this it fell with a great crash—not before a fierce wind, but in a storm of moderate force. It was rotten from center to sap wood.

The inspector of a great bridge, newly made, reported every thing "admirable." Its mighty beams, its strong trusses, its wonderful spans, and its massive cables were the pride of all observers.

A young man fishing from one of the huge chains, underneath the road bed, noticed a flaw in one of its links. It was only a slight opening, and yet it might become worse. Thought he, "A chain, as a character, is only as strong as its weakest part. and though this is a little weakness among the great chains and cables and timbers of this bridge, it should be known." He therefore reported it. He was laughed at for his pains. But, by

and by, the rattle and strain of an extra load snapped it, and away went the whole structure.

In our work as dentists, the greatest essentials are the little details, both because they are more liable to be overlooked and because all our most important operations are made up of these little details, and must be judged for better or for worse, by their character. If these are all well wrought the whole is perfect, but no little thing may be overlooked with impunity. The great Atkinson was once filling a frail central incisor when I saw a slight check in the enamel from the pressure of the gold. It required a magnifying glass to discover it with surety. "O," said he, "that is nothing," and he finished the beautiful filling that had cost him two hours' labor, and the patient much fatigue and twenty-five dollars. I saw it six months afterward, and sure enough, it was but very slightly worse. But in a year the tooth was ruined by it.

And so in all the affairs of life. If we are careful of the little things of our appearance, and manners, and conduct, the great things will take care of themselves. A small blemish in the countenance mars the whole beauty. A little vulgarity, even from one looking clean and wholesome, is a stench in our nostrils. Dirty nails, unkempt hair or slovenly dress in a dentist, otherwise esthetic, is intolerable. "I went to young Brown the other morning to have my teeth filled," said a lady, "because I had learned to like him for his neatness, politeness and skill. But I had hardly taken the chair before the stench of stale tobacco smoke so offended me that I made an excuse for a postponement, and cannot make up my mind to return." And yet that young man had cleaned his mouth and attempted to disguise his breath with spices. "It is the little foxes that spoil the vine."

We are quite apt to reply when criticised:—

"Well, now, that is a very little thing. It is hardly worth mentioning."

Yes, it may be a little fault; and yet it is from these little faults that great faults begin.

When young, I was passing a high dam, and saw a little trickle of water oozing out of the foundation. I began to play with it, and to direct its course. A gentleman with me in surprise said:—

"Quick! We must report this to the miller, or the whole dam will be ruined."

"O shaw," I replied, "I have seen it coming through here before to-day. I can stop it with a handful of clay."

But I had hardly taken my hand off before it burst through the clay, and brought with it little pebbles, and dirt from the clam. Even plugging it did no good; nor a great crib of cement. It only increased after such temporizing. The great pond itself had to be emptied, and the huge wall torn out where the leak was, before permanent repairs could be made.

Thus, when we discover even little faults in our character—or have them pointed out to us by others, friend or foe—we cannot repair them too soon, or too thoroughly, or at too great an expense. We must overcome them at all hazard, or they will overcome us.

“He is a fine fellow—but.” But what? Whatever it is why should your friend cling to it?

How often I have heard patients say: “He is a good dentist—but.”

How foolish to hold onto anything that is a *but* in our character or practice!

Said a fine young lady to me recently:—

“George is a smart young man—but.” Why should that young man have any habit that should be in the way of his entire acceptability to the most esthetic young lady?

And what is our *but*? O for some friend or foe to show it to us; and then for courage to overcome it! We are surely growing better or worse; and as surely as none of us grow strong, and skilful, and of sterling worth suddenly, so surely may we degenerate so slowly and by such “little things” that we are blinded and bound and destroyed by our degeneracy.

SUNSTROKE.

Dr. L. P. Haskell, Chicago.

An article on “Sunstroke” in the BRIEF contains the following:

“The absence of perspiration in the presence of so great heat is one of the most characteristic symptoms of heat-stroke. When it occurs, the thing to be done is to lower the temperature. As much of the clothing as possible must be removed, and the patient should be transported to a cool and airy place, if possible. Cold must then be applied to the head and body, and ice rubbed over the spine and heart. There is nothing better than placing the body in a cold bath, or wrapping cold wet sheets around it, and keeping it cold by frequently pouring cold water over, or applications of ice.”

In contravention of this treatment I will give the following: Mr. Urquhart, a wealthy gentleman of London, while traveling in the south of Europe, about thirty-five years ago, had a sunstroke. He was taken at once into a Turkish bath and soon revived. On his recovery he began an investigation of this treatment, and satisfied himself that it was rational treatment for sunstroke as well as for other ills of mankind.

On his return to London he introduced the bath into his residence, and then visiting Dr. Barter's water-cure, near Cork, Ireland, induced him to introduce the bath into his establishment, which was done with the most satisfactory results. In the course of time the bath came into general use throughout England, and has been indorsed as a remedial agent by some of the ablest medical practitioners in that country, and notably, Erasmus Wilson, the well-known authority on skin diseases, who, in a treatise read before the Social Science Association, of Glasgow, made one of the strongest arguments on the subject ever written.

In the article quoted above it will be noted that the statement is made that in sunstroke "the absence of perspiration is one of the most characteristic symptoms." Herein is indicated the value of the hot-air bath, for when the entire body, naked, is exposed to high temperatures, much higher than that which caused the sunstroke, nature demands relief, and this comes by the *evaporation of moisture from the surface of the body*. In response to this demand the pores are opened, and perspiration ensues. What follows as a natural result? Why, in order to supply the perspiration, the blood must come to the surface, thus equalizing the circulation, and this, of course, relieves the *congested brain*. The theory is at once physiological and sensible, and has long since been fully demonstrated. The reason why the Turkish, or hot-air bath, is of such great value as a remedial agent, is simply that it places the entire system in a condition to relieve itself of disease as no other treatment does, by opening the pores and eliminating poisonous matter from the system, equalizing the circulation and thus relieving all congested conditions. When these three conditions are fully established nature has an easy task.

Eggs, oranges, lemons, apples, etc., may be preserved sometimes by dipping them in melted paraffin. Of course there must be care that it is not rubbed off in any part.

THE USE OF THE BLOW-PIPE.

L. P. Haskell.

Many of the dentists, who have come to our Post-Graduate School, have said they had not been able to use the mouth blow-pipe, and consequently had trouble in soldering. I informed them that it was largely owing to the fact that they had tried to use the little jeweler's blow-pipe which is totally unfit for dentists' use, and yet these are what are furnished the students in all the dental colleges, and had been from time immemorial. The jeweler uses low grades of solder, has no investment to contend with, and requires but a small jet of flame for his delicate work. The dentist using hard flowing solders with investments, which need to be heated and kept hot, requires a large flame, necessitating a large mouth-piece and flame aperture. The jeweler's pipe is so small it has to be taken inside the lips, tiring the muscles. The proper blow-pipe has a large mouth-piece which is prest against the lips, so it can be used with ease, for a long time if needed. Such a blow-pipe is furnished by the dealers at my suggestion, and to which they have appended my name.

Another important desideration where gas is used, is a proper burner for soldering with flame resembling that of a large alcohol lamp. Such an one is the McIntosh Battery Co., of Chicago, got up for me some years ago, and has also been duplicated by Justi. It is a cone filled with fine wire gauze, which simply breaks the force of the gas, so the flame rises directly upward, and can be caught by the blow-pipe and made into a blue flame, and directed readily upon the work.

Soldering is an easy process provided the conditions are all right. First, the plate should be dropt into the acid (sulfuric) while hot, to clean the surface of oxid. Second, there should be plenty of borax and yet not an excess. Third, the solder should not be applied in large pieces, and never heat the case till the borax and solder have been applied. Fourth, heat the case hot as possible over a gas burner. In soldering the teeth in a partial case (the time has long since past when it was advisable to solder full cases), apply the heat first to the middle of the plate, for the backings are so exposed that if the heat is applied to them first, being hotter than the plate, the solder tends to flow from the plate on to them.

Do not use too easy flowing solders, because melting before the plate is hot enough to receive it, as in the case of silver solder.

it rolls into a ball. It should sweat down where it lies and blend at once into the plate. Do not use too much solder, only enough to make a proper finish. Add if necessary, rather than put on too much before soldering.

MAKING PARTIAL DENTURES.

Dr. D. A. Anderson, Exeter, Ont., Canada.

Impressions, either for full or partial dentures, are better obtained with plaster of Paris. Where difficulty of removal is foreseen, I insert a rim of compound which takes the place of the plaster around the teeth. Having run my model and articulated it (when necessary), I very slightly and smoothly trim the plaster around the necks of the teeth to insure a close fit. A snug fitting partial plate will not cause the teeth to decay as one does which works closely against them.

With the cast in proper shape we mold a plate on it and mount with teeth of the proper shade, size, and shape, and properly set for correct articulation and expression.

I next take some dissolved black rubber of creamy consistency, and smear it over the cast, being careful to rub it well into every part over which I wish the plate to fit. Then gently heat a sheet of rubber and press it evenly into place, and with a hot, sharp knife, trim around the teeth, working the rubber well in between them. The portions of rubber that are to receive the teeth, must, of course, be made thicker; then heat the teeth over the spirit lamp, and press into place.

After the teeth are in proper position, trim with a hot knife all the excess of rubber, putting the plate in as near the desired shape as possible, then flask and vulcanize.

In ordinary cases, from the time your cast is ready till your plate is prepared for the flask does not consume over twenty minutes. Could that be done by the old process of waxing?

Thus you have a saving of time and no waste of rubber, for you are always sure of getting in the proper amount of rubber, and run no risk of getting in too much or too little. The plate is just the desired thickness, and no excess to be scraped away, in fact, I have no scraping to do at all, merely sandpapering the plate and polishing it. Besides this the vulcanit is tougher and better than when thick plates are made. It fits perfectly around the natural teeth without any filing. How many of us have found that in filing a partial plate, to make it fit around the

natural teeth, we met a difficulty to know just how far to go that the fit might be perfect? By this method such difficulty is avoided.

By this plan there is no danger of breaking the cast or marring the work in any way.

My reason for using dissolved black rubber is perhaps only a whim, but I like to line my rubber plates with black.

Please do not raise the objection that without the old-style pressure the rubber will not be forced into every part, my experience has taught me differently.

I have tried this method for two years, and will you allow me to state a fact? I have never had one failure since adopting it.

A MYSTERIOUS STAIN.

Dr. J. A. Stewart, Longview, Tex.

I have a peculiar case of discoloration on the face of the upper incisors of a patient. It will not polish off, and I have tried chlorid of lime and acetic acid, but it has no effect. The teeth have no cavities in them, and are live, good teeth. I am at a loss to know what to do. The discoloration is of a dark brown, and has been on them for years. The young man is of about nineteen or twenty years. He says he does not know what caused it unless it was concentrated lye, which he took into his mouth by mistake when about nine years of age, and which came very near killing him from what he swallowed. Do you know any thing by which I could bleach them without injury to either the pulp or enamel?

Amalgam covered with gold is not desirable, if the gold is prest into the soft amalgam. The gold becomes discolored. Nearly filling a cavity with cement, and then pressing in its surface soft little pieces of crystal or foil gold, to be left till the cement has hardened, then to be added to till the cavity is filled with a veneer of solid gold, is much better. It does not take long for the oxiphosphate to harden, and but little space need be left for the veneer, yet the filling is good and durable. It is really better than all gold or amalgam, for the cement neither shrinks nor swells, and so tenaciously adheres to the walls of the cavity as to make an absolute water-proof filling, and protected by the gold or alloy veneer, cannot dissolve.

CURRENT THOUGHTS.

PROSTHESIS.

Wm. Ernest Walker, D.D.S.

Proceed as follows: Having secured an accurate plaster-cast, coat it with rubber cement (amber cement furnished by the Chase Combination Dental Plate Company is excellent for this purpose). Press on to the cast a sheet of vulcanizable rubber, to which it will adhere because of the rubber cement. When pressing the rubber on to the cast, if there are any decided depressions on the alveolar ridge, they may be filled with small pieces of rubber before the large piece is put over all, which will give a uniform surface. This is now vulcanized, but only about one-half or two-thirds the usual time. This gives a vulcanit base-plate which will fit more accurately than it would if made by any other method, as the cast escapes the usual screw pressure which obliterates the finer features of the cast, and which occasionally results in fracture of the cast, as shown by the sharp thread-like ridge which is often found crossing the vulcanized plates.

This is now used as a base-plate in obtaining the occlusion, or "bite," when it is filled with plaster and placed on the articulator. To this vulcanit base-plate the teeth are now waxed, and the plate is found to be much more steady and more satisfactory while trying in than if only a wax plate had been used. Another advantage in this method is that the rugae are preserved; and if it is found that the plate does not fit, we can take another impression, and thus save the time occasionally lost in setting up the teeth when the impression is faulty. The gums may now be carved up and the plate finished in the usual way; or at this stage the following method may be adopted: Having waxed the teeth on the vulcanit base-plate and tried them in, remove any wax from between the teeth, which can be done with chloroform. Now, instead of carving up the gums, lay a strip of moldin on the gum at the necks of the teeth; punch holes in a semi-circular piece of very thin rubber-dam, and pass the teeth through, stretching the rubber over the moldin, which, by a little manipulation through the rubber, will form a very natural gum. When and where necessary the dam can be turned back

and moldin added, and again prest to shape under the rubber-dam. After flasking, the dam is pulled out and the moldin brought with it, leaving the plaster clear.

Another great time-saving method, which can be used in some cases, is as follows: Having removed the bite-wax from the vulcanit base-plate, clear the surface of the latter with chloroform, benzine or gasoline. The alveolar ridge portion is next coated with amber cement and covered with a sheet of rubber, not extending it over the palate. The teeth are now warmed and pressed into the rubber, when it will be found that the rubber bulges over their necks, forming a very natural festoon, without any spatulation. Teeth with a slight groove at the neck, such as are made for celluloid work, are best for this method. In trying the piece in the mouth, any desired change in the position of the teeth is made by removing the tooth, warming and resetting. When the teeth are satisfactorily arranged, a piece of modeling composition is used to fill the vault to support the teeth from the lingual side.

When the composition is hard the teeth are removed and a thin sheet of vulcanizable pink rubber is warmed and placed over the labial and buccal surface, extending over the depressions in the red rubber from which the teeth have been removed, and into which the pink rubber sinks and shows nicely where each tooth is to be placed. Each tooth is now warmed and replaced, the impression in the compound serving to guide each tooth into the correct position. The piece is now flased on the cast and plaster built up so as to support the buccal and labial faces of the teeth.

When the plaster is hard the modeling composition is removed. Small pieces of rubber are now warmed and placed about the pins so as to anchor the teeth, which must first be coated with amber cement.

The Griswold flask is excellent for this work, as it supports the plaster which surrounds the teeth, but an ordinary flask will do. No separating fluid is necessary before filling the upper portion of the flask, as it will not have to be opened till vulcanized. No allowance of time is to be made for the previous vulcanization of the base-plate. When the piece is removed the usual excess is not found, and after a little trimming at edges of plate and overpins, attention can be given to labial surface, which is found to require no scraping, but should be cleaned with pumice carried by bibulous paper moistened with water or alcohol, or, best of all, chloroform, and then with chalk

on chamois or flannel; after which the color of the gums is improved by placing in a glass dish of alcohol in the sun, which bleaches it.

Note that the time usually spent in "waxing up" is saved; also the time usually spent in waiting for the plaster to harden that the flask may be opened; likewise that ordinarily consumed in washing out wax, packing and closing flask, as well as that generally spent in scraping and filing, while an even more important consideration being that the hard, vulcanized surface of the rubber is preserved most all over the plate. The rugæ are also well represented, as the rubber over that portion is uniform in thickness.

Plugger Points.

PAINLESS DENTISTRY.

Dr. J. D. Hodgen.

To my mind painless dentistry is the most interesting subject before the dental profession. It is the long-sought result for which the Ponce de Leons of dentistry have been looking, but unlike the hope of that illustrious Spaniard, it has not been that mythical, impracticable result, ever vanishing before us, but we have it with us. It is almost an assured fact in many respects. To my mind, the most important thing that has been given us along the line of discoveries has been cataphoresis. This is the most important advance, it seems to me, from the time of Horace Wells' discovery fifty-two years ago. We have studied cataphoresis from every phase. Perhaps most of you are familiar with every point in it. Jamaica dogwood is one of the most simple, the most inexpensive, and the least harmful of all drugs used in this manner. It is a medicament for which I am very grateful. When it does have its best effect, I would not trade an ounce of the fluid extract of Jamaica dogwood for a wagon-load of cataphoric apparatuses. That is saying a good deal when everyone who knows me knows I am wedded to cataphoresis. When it does take effect it is almost immediate, and we have no trouble, can work right along, knowing that our patients are not being tortured by the operation. I have a family of patients, and before I learned of this dogwood, I would rather see most any man come to my office with most any kind of a bill than one of those patients. It was with perfect dread that I saw them. I actually sent two or three of them away; I could not work for them. With this drug I can work for the entire family;

one girl had the impudence to go to sleep while I was excavating her tooth. Now, Dr. Van Ogden asked me if I could swear to the good results. I am perfectly willing to so swear; but I willingly admit I have found in my own experience that there are cases where it will not work. When it does work, it works most beautifully.

Another thing I presume many of you have tried is eucain. I have used it for some time, and have had perhaps more comfort from it than any other thing I have ever used, especially in the extraction of teeth, with hypodermic injections. This, of course, is used in a variety of solutions, but to my mind the 10 per cent, which is the saturated solution, is the best to use. Then, of course, we have cocain guaiacol, and cocain itself. I believe there is eucain and guaiacol. The purpose of guaiacol is to carry the cocain, to carry it so it will not be taken up by other tissues. It has been proven that half a dram of guaiacol and a few grains of cocain can both be dropped into a beaker of water, and, notwithstanding the solubility of cocain in water, when they are examined afterward the guaiacol will be found to contain 88 per cent of the cocain while only 12 per cent of it will be found in the water, showing the superior solubility of cocain in guaiacol. So we may believe, if the cocain is kept in solution by guaiacol, it does not penetrate the tissues to the extent of perhaps causing cocain poison. Unfortunately, however, guaiacol is an escharotic. It is claimed, however, by some of the manufacturing pharmacists that this can be gotten rid of. When this effect is gotten rid of in the action of guaiacol it will be a valuable remedy with cocain, to my mind, and I shall hail the day with much joy. *Stomatological Gazette.*

PAINLESS DENTISTRY.

Dr. Clyde Payne, San Francisco.

We owe it to our patients to use the means at our hands to make the operations painless. There is no operation in the mouth that cannot be made quite painless. It takes a little more time, but the patient is usually willing to pay for the extra time.

Regarding the formula I use—carbonate of potassium, glycerin, cocain and carbolic acid in a saturated solution—I have had excellent results with it, as have Drs. Younger, Cool, Lewis and others, who have used it. It is the next best thing

for sensitive dentin to cataphoric medication. Apply the rubber-dam, dry out the cavity thoroughly—dry it out with alcohol; place a drop of the obtundent into the cavity and throw a continuous blast of hot air on it, and keep it up for five minutes, when you can excavate quite painlessly.

The basis of nearly all local anesthetics is cocain. It is a dangerous drug to use if you do not understand its physiological action; but for hypodermic injections for the painless extraction of teeth, I use the following formula, in which the ingredients are so proportioned that I am yet to have an ill-physiological effect from cocain: Cocain, 15 grains; glycerin, 5 drams; nitro-glycerin, 1-10 of a grain; sulphates of morphia and atropia, 1 grain; carbolic acid, 3 drops; and distilled water sufficient to make a two-ounce mixture. There is sufficient glycerin to localize the cocain holding it in apposition to the parts a sufficient length of time to complete the operation, and not very long so that it acts as an irritant and causes a swelling. In patients who have a poor circulation sometimes there is a swelling with this formula, but it will be painless and will subside as soon as the anesthetic, with which you have infiltrated the tissues, has become absorbed. The nitro-glycerin stimulates the heart just in proportion as the cocain may depress it. The sulphates of morphia and atropia overcome the after-pain. The carbolic acid keeps the solution.

I will give you an idea of the sterility of this combination. Dr. S. E. Knowles used some that had been standing nine months with a perfect result. The anesthetic figures a $1\frac{1}{2}$ per cent solution of cocain.

Many of you are using this formula. I mention it again for the benefit of those who might wish to try it. This is the first time that the formula has been made public property, though I gave it to every one that asked me for it.

Operations of implanation can be made with this formula without pain. Dr. W. J. Younger removed a tumor from the mouth of a patient after I had anesthetized the parts, without pain. The wound healed by first intention.

I had occasion to assist Dr. W. A. Bryant in an operation where surgical means were taken to correct a very pronounced superior protrusion. The four incisors were extracted, four new sockets drilled and the teeth replanted. The operation was painless.

I use it always before adjusting a clamp if the clamp is to impinge on the gum.

Gazette.

SELF CULTURE AND THE SCIENTIST.

Prof. J. P. Lesley, State Geologist of Pennsylvania.

Self culture is the only real and noble aim of life. The magnificence, beauty, and utility of a glacier, as a perpetual reservoir of solid moisture, is not gauged by the size, arrangement, or the constitutional features of its moraines; neither is the greatness and usefulness of the philosopher measured by the amount of his knowledge of physical facts and theories.

Of all kinds of intellectual greatness, the greatest is achieved by the philosopher who stands before the thinking world as a model of scientific virtue: deaf to flattery; insensible to paltry hostile criticism; patient of opposition; dead to the temptations of self-interest; calmly superior to the misjudgments of the short-sighted; whom nothing diverts from the endeavor to live nobly, and to whom noble means are as indispensable as noble ends; in whom the most brilliant successes foster neither vanity nor arrogance; to whom fame is unimportant, and poverty a trivial circumstance; whose joys, like fragrant breezes from an encircling landscape, come from the surrounding friendships of the general world, to whose best interests the noble heart is forever loyal. . . .

Another subject for serious reflection is the over-accumulation of scientific information. Certainly the feeling prevails that the world cannot have too much science. But the science of learning and the science of knowledge are not quite identical. Learning has too often, in individuals, overwhelmed and smothered to death knowledge. The average human mind, when overstocked with information, acts like a general put in command of an army too large for him to handle. Many a vaulting scientific ambition has been thus disgraced. Nor is this the only danger we run; for the accumulation of facts has a natural tendency to breed an intellectual avarice, a passion for the piling-up of masses of facts old and new, regardless of their uses. In the great game of our spiritual existence, facts are mere counters with which to play the game. A million of them are worth nothing, unless the player knows how to play well the game; and when the game is over the worthless counters are swept back into the drawer. The danger moreover pursues us into higher and higher planes of science. Not only the avarice of facts, but of their explanations also, may end in a wealthy poverty of intellect for which there is no cure.

Temperance in science is obligatory from another point of view. As mere wealth of possessions cannot guarantee happiness, neither can a superfluity of learning insure wisdom. When the body from overfeeding grows plethoric, its vital energies subside and its life is endangered. The intellect may be mischievously crammed with science. How much we know is not the best question, but how we got what we know; and what we can do with it, and above all what it has made of us. The tendency of training now is to subordinate the soul to that which should be only its endowment and adornment; to turn the thinker into a mere walking encyclopedia, text-book, or circle of the mechanic arts, is not to produce the highest type of man. What ridiculous and pitiable creations are these!—an authority in physics who cannot speak the truth? a leader in natural history who is given over to the torments of envy? a god in chemical research sick of some false quotation? a youthful prodigy of mathematical science tottering with unelastic steps and outstretched arms to grasp his future fame. Yet no one will deny that the intemperate pursuit of any branch of science has a tendency to produce such characters, by elevating to undue importance the individual accumulation of scientific facts and scientific theories, to the neglect and depreciation of that spirit of truth which alone can inspire and justify an earnest study of the material universe.

We should reflect that it is as true of science as of religion that the mere letter of its code threatens its devotee with intellectual death; and that only by breathing its purest spirit can the man of science keep his better character alive,—that indefinable spirit, which in its intimate and essential nature, has little to do with the number of facts discovered, or theories accepted; a spirit which merely exercises itself in research, and accepts discoveries as delightful accidents; a spirit which walks the paths of science, not as if they were turnpikes converging on some smoky and squalid focus of toil-wearied population, but as if they had been graveled and flower-bordered for it through some princely park; a spirit of natural and cultivated nobleness, sweetened by boundless friendship for the world and all that lives therein; just and true to all men worthy or unworthy, proud without vanity, industrious without haste, stating its own griefs as lightly as an angel might, and generously bringing help to the discouraged and forlorn. In every one of us there is this genius, if we did but know it; and, as Emerson well says: "The moral is the measure of its health."

Self Culture.

AMALGAM.

A Discussion in Atlanta Society.

Doctor R. B. Adair, in *Dental Weekly*, advocates the filling of the teeth—posterior to the first bicuspid—with amalgam. The observance of this practice insuring the saving of more teeth and conserving the strength and time of the operator.

The disrepute in which amalgam is held by some, he says, is largely caused by the hasty and slovenly manner of its introduction. If the same preparation of cavities, and careful manipulation were observed as when gold is used, the essayist predicted results that would challenge the admiration and endorsement of even the most partisan gold man.

Dr. Brosius: Too large pieces of amalgam should not be placed in a cavity. The first piece in a large cavity should be quite soft, and the successive pieces should be harder as the filling grows to completion, finishing with that which is quite hard. This makes a filling in which the mercury is more thoroughly diffused throughout the mass.

Dr. Rosser: In the first years of his practice considered that in proportion as he used amalgam the more harm he was doing his patients. Now he is sure his patients would have been better served if he had used more amalgam. Cavities for amalgam should be prepared with as much care as if gold were to be used. Lack of carefulness in detail is the cause of many failures. Each filling should be finished at a second setting. Be careful about overlapping edges. Cement should be used as a base in all large cavities. If two approximate fillings are to be made, put in one at a time and finish it before filling the other.

Dr. Jewett: Get it out of the patient's mind that because you are using amalgam it must be a cheap filling. Show them that it requires skill and judgment to make a good amalgam filling. The cheap-John idea is what does the damage in many instances. It is not an oxid that forms on it, but a sulphid, and that blackens it.

Dr. Chappel: I am an advocate of amalgam, but care must be taken in both the preparation of the cavity and the introduction of the filling. The rotary motion for packing is not so good as the direct pressure.

Dr. Frank Smith: Amalgam has been a puzzle to me. I practiced ten years before using it. Too much of it is used. The best results are to be had by using it as a veneer over ce-

ment or tin foil. Fill a cavity nearly full with tin and finish with amalgam, which gives a harder surface than tin alone.

Dr. Browne uses a matrix of mica, which is left in till the final finish.

Dr. W. E. Walker: The matrix of Dr. Browne will not do. Too much overhanging amalgam will be left to be finished off. It is more difficult to finish amalgam at the cervical margin than gold. The best matrix is made of German silver bent to the contour and adapted well at the cervix. Two wedges, one from labial and one from the inner side can be pressed in to hold the matrix tight against the wall. The double wedges can be easily removed.

Dental Weekly.

THE ETIOLOGY OF CARIES.

Dr. D. M. Cattell, Chicago.

In 1835 Robertson claimed that caries was caused by acids formed by decomposition occurring at the exact spot of the breaking down tooth structure; also that caries always began on the outside surface of the tooth.

Regnard corroborated the claim of Robertson, namely, "the destruction of the teeth by decomposition."

Desirabode claimed that if acids caused caries the whole tooth would go rather than in sections.

Dr. Bridgeman proposed the electric theory of decay, dissolving away lime salts by the formation and action of electricity.

Dr. Watts' theory (chemical, similar to Robertson) differed some, namely, that caries of the teeth was produced by mineral acids, developed at the immediate point where the action was produced, and did the work of dissolution while in their nascent state. The acids proposed were hydrochloric, producing yellow decay; nitric, the white variety, and sulphuric, the dark or black caries.

During the years the last four or five named gentlemen were working on the theory of the origin of dental caries, Magitot, of Paris, was working along lines hoping to find a better cause than any heretofore suggested. He was a faithful worker, and advanced many points to help out in the solution of the work in hand. Just what his final conclusions were, I am not able to state at present.

In the middle of the present century microorganisms began.

to be seriously connected with caries of the teeth. After 1875, a closer study of microorganisms began, and the different species or nations were studied with more distinctness. In the latter part of the '60s, Leber and Rottenstein discovered that the "granular matter" of Tomes and others were germs in the dentinal tubuli of carious teeth, as well as in the cavity already produced. But they did not know how closely connected they were with the causes of caries. They also told of a zone of resisting calcific deposit appearing to be thrown up to prevent further ingress of the carious agents. Later, about 1880, Mills and Underwood showed by a new staining process that this supposed "zone of resistance" was also microorganisms, probably of a different species. Dr. Koch discovered a process of staining different species of germs with different colors, and Mills and Underwood took advantage of his discovery. Mills and Underwood proposed that decalcification was the result of acids; that the acids were secreted by the germs and the germs themselves destroyed the organic matter, using it as food. They did not prove the proposition.

About 1881, Dr. Miller instituted a series of experiments and proved that ptyalin had nothing to do with producing an acid condition of the saliva, as had been supposed heretofore, but that microorganisms produced the acid. Miller also proved the physiology, so to speak, of microorganisms: (1) That they had a digestive apparatus (produced a digestive solvent); (2) that they were nourished (assimilated food); (3) that they eliminated poisons (produced acids); and (4) that they had the power of reproducing their own kind. In other words, he proved that microorganisms could take hold of certain materials, change the chemistry of them for their own uses and throw off again the changed material or chemical. Miller proved that the germs produced the special acid that dissolved out the lime salts of the teeth; that the microorganisms fed on or digested the animal or organic matrix. In other words, the function of the microorganisms in the production of caries of the teeth was proven; also that the particular secretion dissolving the lime salts was lactic acid. Miller suggested that the process of enamel decay was similar to caries of the dentin; and such it has been proven to be by Black and Williams, the streptococci media germs forming about themselves a gelatinous substance and becoming attached to the enamel, under which the lactic acid is secreted, dissolving out the cement substance from between the rods, which soon fall out, allowing ingress of microorganisms to the dentin.

Last winter Williams, of England, read a paper before an association of dentists in New York City on the "Pathology of Enamel," exhibiting the most beautiful microscopic specimens ever seen. They were so thin, some of them, as to represent only the thickness of a single enamel rod. Many of his specimens showed that destruction of enamel under the influence of micro-organisms was going on long before the naked eye, with the help of a fine pointed explorer, could detect a fault on the enamel surface. His experiments have proven much that heretofore had only been surmised. Our own Black has done considerable work in the same line, and many suggestions and thoughts that have been presented by him from time to time, within the last few years, have now been proven beyond a doubt to be facts by the scientific and positive display of Williams. Indeed, the thoughts and ideas and researches of the two men have been practically the same.

Williams showed distinctively, not once, but many times, that lactic acid may dissolve out the cement substance between the enamel rods, and one or more enamel rods drop out, and through the puncture in the enamel a large area of dentin may be affected, and yet the eye or the sharp point that the dentist may have in the way of an explorer is not able to detect any faulty spot on the surface of the enamel at that point. Williams' specimens under the microscope showed it very distinctly.

The other questions are soon answered. "Why is caries so much more active in some mouths than in others?" Well, why is the atmosphere in some rooms not so healthy as in others? The moisture or the juices of the body as exhibited in the mouth, in some are more healthful than in others, that is, they are not so corrosive, not so active, and it is the surroundings of the tooth that influence its destruction, nothing else.

"What changes take place where caries ceases its activity in mouths heretofore predisposed?" If we know what changes, we would apply the remedy and cause the change in all mouths immediately and stop further decay. We do not know it; we will not know it for some time to come.

"Are there recognizable signs by which we can know whether or not caries will cease with advancing age?" Most decidedly not. We cannot prognosticate in that direction yet. If there are signs, we do not know them. In some mouths we find almost perfect teeth, but little decay. Where we would suppose from the general appearance of the patient that we would find rapid decay, the teeth are perfect. We find individuals strong

and healthy to all appearances, robust in every way, with their teeth softening and dissolving rapidly. In mouths where we find the thin saliva without odor, which we would call from a physical examination, pure and healthy, the teeth are being dissolved rapidly. Again, in persons whose saliva is ropy, and we would suppose that it would be very deleterious to tooth structure, we find well developed, strong teeth that are not carious. In fact, we know a few things, and a great many other things we do not know.

Review.

DR. BONWILL IN ENGLAND.

By the Editor of the British Journal of Dental Science.

There are few, if any, names in the dental profession better known than that of Dr. Bonwill. The crown and the engine mallet which bear his name have made that name familiar to most of us, while in many other directions his energy and ingenuity have found scope in inventions which he has placed unprotected by patents at the disposal of his brethren. Having received an invitation to attend a demonstration at the Institute of Dental Technology, I availed myself of the opportunity.

Dr. Bonwill is a man of sixty-four, rather below the medium height, and stands erect. He has long iron-grey hair, white mustache and "imperial," wears spectacles and is very deaf. Full of fire and energy, he commands attention not only by asking for it and expecting it, but also by being possessed of fluent speech and boundless enthusiasm.

When I entered he was explaining his engine, which is tolerably well known in this country. It has a cord running fairly slack right on to pulleys on the hand-piece, and Dr. Bonwill claims for it that it runs at one-half less foot pressure than any other. If he is using it for any purpose which requires a very high rate of revolution (as in trephining), he hitches off the pedal attachment and employs an assistant to turn a handle which is fixed to multiplying cog-wheels on the off side of the driving wheel. He has several attachments which are models of excellent workmanship. One, the hand-piece for ordinary burs, works very smoothly and true even when a large bone-excavating bur, as large as a hazel nut is working. Another, in addition to carrying a bur, can be immediately converted into an engine mallet. Others are a right angle attachment, a right angle mallet, and a safety bur for trephining the skull, which he is bringing to the notice of Professor Victor Horsley. His im-

provement on the Herbst method is that in his attachment the burnisher has not only the rotary, but also the mallet action which he claims is an advantage.

His favorite matrix for contouring amalgams is impression composition. His method is as follows: Place a clamp on the tooth, and having softened the composition, pack it round the tooth and clamp, trimming it up to the required shape. It then not only acts as a matrix, but also as a dam to exclude moisture. Pack in the amalgam with bibulous paper, using considerable force, and when the filling is nearly complete, burnish some of the alloy filings into the surface to absorb mercury. This ensures a hard filling, strong on the periphery, full contour and articulation, and whiter in color than could otherwise be obtained. Quick work is necessary for the best results. He deprecates the use of gold or tin to absorb mercury as a different element is introduced, and the same hardness cannot be obtained. If two adjoining cavities are to be filled, place the one matrix round them both, and divide with a file afterward. The matrix can be removed with a hot instrument. His routine plan is to temporarily fill all interstitial cavities with pink sheet gutta-percha. This is left in for some months, and exercises a separating action on the teeth, which admits of a full contour when the permanent filling is introduced. For three months before coming to Europe he has filled all such teeth with this material, and he will complete his operations on his return. In finishing off cervical edges he has a fine-cut narrow right-angle tapering finishing-bur, which he runs between the teeth. This bur he also uses to cut incipient interstitial caries in the lingual surfaces of incisors, taking care to let the tips of the teeth remain in contact. He guarantees that no fresh caries will result in the tissues so treated.

In gold filling he is a great admirer of Abbey's soft gold foil. This is the only soft gold which, to his knowledge, remains non-cohesive after annealing, and he considers that it should always be placed next the dentin, as it is a great tooth-saver. Cohesive gold will adhere to it, and can be used for the contouring part of the operation. He uses for the soft foil some serrated hand pluggers, which he has used for the last twenty-five years. They are of the foot-plugger shape.

For cohesive gold, on the contrary, he uses smooth-ended elephant-foot pluggers in his engine, "wiping" the plugger along the surface of the gold as the blows are so rapid. In this manner he claims that he can make a solid plug of a book of Abbey's.

foil in twenty-five minutes. He says he would use amalgam in such a case now. Abbey's soft foil should be heated on platinum foil, but the cohesive foil he anneals in the naked flame at a higher temperature. He hopes to return in 1900, and by that time he hopes to have given up using gold at all. What he will use instead he did not divulge. He has found that if a carious tooth is thoroughly dried, and the caries saturated with paraffin by means of heat, that no fresh trouble commences, as acid has no effect on paraffin. Also after putting in any filling he runs melted paraffin round the margin, and so fills up any possible leak hermetically. He also uses it in oxiphosphate filling, saturating the filling after insertion, and he claims that such a filling will last five times as long as one not so treated. It will wear away on a grinding surface, but will not wash away in interstitial cavities.

Dr. Bonwill showed an articulator which is the nearest reproduction of the human jaw we have yet seen. By it, one is enabled to obtain lateral and forward motion of the lower model as in nature. In full artificial sets he grooves his upper and lower grinding teeth, making the outer rim of the groove in the lower set fit into the middle of the groove in the upper. This, he claims, is the nearest approach to perfection we can obtain by artificial means, and that the comminution of the food is performed much more effectually than by inserting the usual flatly topped teeth. He explained how he gradually became convinced that the human jaw was arranged on geometrical principles, and that the articulator was the result of this conviction. This was rather abstruse, and, in fact, seemed to many somewhat fantastic. He finds the articulator of great use in pyorrhea and in regulation cases. His theory of pyorrhea is that it is caused by annihilated or perverted function, and that if the function of a tooth is restored the pyorrhea will cure itself. He claims that in a practice of forty-two years he has had no pyorrhea among his own patients. In regulation cases he sees the models in the articulator from every point of view, and he says it has taught him great respect for the first permanent molar, which he never extracts for regulation purposes. His theory of the cuspid teeth being so large, prominent, and interlocking—as in the carnivora—is that they were intended in the long jaws of animals to act as guides in the proper closing of the jaws, like the pin half way down the shaft of a pair of dressing forceps to make them close truly. He does not believe in Darwin's evolution theory, and never uses cataphoresis.

He hopes to set about writing a book containing his experiences of forty-two years' work, and it will no doubt prove interesting reading. He is a man of original thought and lofty ideas, which he endeavors to carry out. Some of us cannot see eye to eye with him in all his various theories, but we must all agree in considering him a remarkable man, and one of whom the profession may well be proud. When I left, he was relating to an operating surgeon how he had successfully drilled into and broken up a stone in a woman's bladder by means of a drill in his engine, after attempts at its removal by forceps had failed on account of its large size and firm impaction in the tissues.

THE RELATIVE VALUE OF FILLINGS.

Dr. C. P. Pruyn.

The relative value of filling material depends largely on the individual using them, and the conditions under which they are used. Gold is the best, but there are other filling materials that are very valuable to us, and they should not be decried because they are sometimes badly or carelessly used. I allude particularly to amalgam. Amalgam has a valuable place in dentistry, and its particular value to me appears to be in a combination of the two metals, gold and amalgam, in the same tooth. Which is the better of the two, is a hard matter to say. We might use an illustration of this kind: Which is of the greatest importance in the propagation of the human species, man or woman? Neither is complete without the other. Which is the better of the two, gold or amalgam? When the two are used in combination they fill a field of usefulness that neither one of them fills alone. This is my honest belief. This is a belief that comes to me from an experience of nearly twenty-five years in the practice of dentistry, and for twenty years in this particular line of practice. Take, if you please, extensive decay on the distal surfaces of bicuspid and molars; fill such cavities with amalgam; at the succeeding sitting fill the crown portion of the cavity with gold, so that the two metals may be in complete apposition, and thus no electrical energy is generated to any appreciable extent. After a short time the baser metal will become oxidized, in most cases, beautifully ebonized, the pure metal will be kept bright and clean, the edges of the amalgam filling will have a much better appearance than if the amalgam was used alone because of the oxidation of the baser metal. So that in my practice I

warmly advocate the use of the combination of gold and amalgam in the same tooth. Be sure to have the two metals in apposition. By following this line of practice the amalgam is placed at the cervical borders, where it exhibits its greatest usefulness, while gold will do its best work on the occlusal surfaces, as an illustration we have here, two valuable members of society, each one having its particular position in society where it can be of the most service.

The greatest failure of gold occurs on the cervical borders, and amalgam on the surface. Now by putting each one where it would be at its best, we can do better work than with either one of the metals alone. I frequently see such fillings that have been in the mouth twenty years doing good service to-day, and I feel sure that I am saving with this method of practice more teeth than I could do with the use of either one of these metals separately. It took me a little time to become a convert to this theory, but after consulting some of the old practitioners who had followed this plan for some years, I saw in it a field of usefulness. I have made a great many converts among my professional acquaintances, who have carefully observed the results of this line of my practice.

Twenty years ago or more we were startled by a new departure, a new theory, as some of you remember. There was a triumvirate in this country, consisting of Drs. Flagg, Palmer and Chase, who said that gold was the worst material to use, and that as teeth needed saving amalgam was the best thing to use. It startled us. It came to us "like thunder out of a clear sky," and we began to investigate a little to see whether there was any truth in this wild vagary. As we examined into it we found there was a grain of truth, and that grain of truth was worth investigating. I am thoroughly convinced that I could hardly use either gold or amalgam and say this is the thing par excellence; but I place them hand in hand for the preservation of teeth. I can hardly say definitely and clearly that one of these two is better than the other, because each one has its own particular field of usefulness, and the relative value of each one depends on its environments and to a considerable extent on the thoroughness with which it is manipulated.

The other materials, gutta-percha and cement, of course have a field of usefulness, but to my mind a much more limited one for permanence than either of the two mentioned.

Review.

FILLING MATERIALS.

Dr. C. N. Johnson, Chicago.

The relative value of filling materials, it seems to me, relates more particularly to the individual requirements of each case than any other one thing. As an illustration, I had a patient to-day for whom I did some work, and I want to say a word or two about her, because it is an extreme illustration of the point I just made. It was a young girl, brought to me by her sister, who said that they had practically given up the idea of having her teeth attended to on account of the fact that she positively would not permit any dentist to work on her mouth. She had been to several different dentists, and she was such an uncontrollable individual that no dentist would be bothered with her. I do not blame my fellow practitioners. The girl comes from a good family and ought to have some sense. But in all my experience I have never seen such a combination of pure cussedness in any patient as was concentrated in this girl. Her teeth were in bad condition. There was only one filling in the mouth, and that was an amalgam filling on the mesial surface of a lower molar and was not well inserted. But it was a marvel to me how it was inserted as well as it was. She was not ordinarily a nervous child, but the moment she took the chair she was apprehensive, not because she had been hurt previously, but had heard stories about the pain inflicted by dentists, and did not endeavor to have the least control of herself. She was not one of those individuals with whom one could reason. I have been ordinarily successful in managing children of a nervous temperament, but when I began to work on that child my first impulse was to dismiss her as the other dentists had done, and was on the verge of telling her to get out of the chair. Then the thought struck me that if I let her go, her teeth would be lost, for I felt sure they would not take her to any other dentist. So I resolved to put all my ingenuity into the case, and manipulated her as gently as I could, biting my lips much of the time to keep back the censure which I felt like giving her. At the final sitting to-day I have controlled her to the point of doing definite work on her teeth. Gold here has no place as a filling material. The most valuable filling material I know of in such a case is cement. Cement will stick where gutta-percha will not. I filled all of these teeth with cement. I have made an impression on that child and she will come back in the fall when I shall do better work for her.

Review.

CARIES *vs.* EROSION.*Dr. E. Noyes.*

Dr. Cattell speaks of caries as necessarily being a death of the animal matter, the destruction of the vitality of the tissue before the integrity of the tissue was affected, and he made that as a distinction between caries and erosion. It seems to me this is not exactly a clear way of looking at it. I regard the distinction between caries and erosion as fundamental, that is, in caries you always have a softening of the surface attacked, in erosion you never have a softening of the surface attacked. In caries you always have first the inorganic portion of the tooth substance attacked and dissolved out and the organic used as food by the microorganisms. In erosion the surface is always perfectly hard.

In regard to the etiology of dental caries it seems to me that we can regard the subject as standing in a negative position.

To look back over the history of dental caries it has had several other such periods before. It was first suggested that the destruction of the tooth substance is caused by acids, then that the acids are formed at the point attacked, and the question is asked, where do the acids come from and what are they?

In this position the knowledge on the subject stood still for years, till the development of science in regard to microorganisms was sufficiently advanced to prove that the development of the acid was due to the vital action of microorganisms at the point attacked.

That caries of the teeth is caused by the action of microorganisms, it seems to me, has been proven and is established ground; it is no longer a theory but a fact. We have come again to a negative position which is perhaps stated in this way. What modifies the action of the microorganisms so that in one mouth they attack the teeth, in another they do not; they exist in all cases. In the same individual, at one time they attack the teeth, at another they do not. That microorganisms destroy the tissues we know, but why in one case where we would expect them to they do not, and in another where we would expect them not to they do, we do not know. So much we know, so much we do not know.

The work of Dr. Black and Dr. Williams shows that the resistance of the teeth to caries is not caused by their chemical composition, nor is it due to the perfection of their histological structure, but that it must be due to their environment, the con-

ditions surrounding the teeth which affect the vitality of the microörganisms, or their action in some way. In regard to these modifications of action we know nothing as yet, that subject is to be developed. We stand in a position to ask questions, not to answer them. The questions can only be answered by work, and that work has not yet been done. *Review.*

RECESSION OF THE GUMS.

DISCUSSION.

Dr. Edmund Noyes: The only successful instances of gum restoration in my own observations and practice have been in the proximal spaces after carefully restoring the contour of the teeth by filling. Where they have been either badly filled or long decayed, so that the spaces between the teeth have been such as to cause destruction of the gum, after restoring the teeth to their normal form so as to protect the interproximate space, the gum has been restored; and this suggests to my mind whether there is not an inherent tendency on the part of gum tissue to grow, which is held down and repressed under ordinary circumstances by the friction of food and the ordinary action which is brought to bear on the margins of the gums, and whether in many instances under the protection of these splints the gum would not grow into the space without positive and severe irritation. Irritation of the gums is something that we must deal with carefully, for it may sometimes destroy gums instead of causing them to grow.

Dr. A. W. Harlan: I have found in trying to restore gum tissue, where it was uniformly wasted away around the necks of the teeth, that if we take a tolerably stout silk thread and well wax it, and tie it firmly around the teeth, leave it there, it will cause a degree of irritation that will have the gum tissue come up and go beyond the ligature, so that by watching it carefully, keeping the mouth clean, we will be able to produce uniformly a pretty good margin of gum and afterward care for it antiseptically after the ligature is taken off, and we will find in some of those "symmetrical wastings" that the necks will be very well covered. In others I have found, by loosening the gum tissue around the surfaces of the root and making transverse cuts in the gums at regular intervals, I could force it down.

Dr. G. B. Perry: I would like to ask Dr. Carpenter whether he has ever obtained good results from the use of the toothbrush in producing irritation of the gums.

Dr. Carpenter: No sir. I think the toothbrush, where it is used more than once a day, will do more harm than good.

Dr. J. N. Crouse: I had an interesting case where the gum tissue and alveolar process had wasted away. The patient was going to New York to live, and I turned him over to Dr. Atkinson. Dr. Atkinson produced a new growth of gum tissue by sponge grafting, taking an impression similar to that described by the essayist, and then cut off from the model the amount of tissue that it was desired to have built in to take its place, and afterward using sponge graft. I saw that case a year afterward and the patient was doing well. About five years later the gum tissue wasted away again, and I did not attempt to carry out this process again because the patient was not encouraged by the previous treatment. I have performed this operation in a measure, not using vulcanit, however, but a very light plate of gold. During the last ten years I have not done much along this line because I have been otherwise engaged. In many instances, however, I think we are compensated for our efforts in this direction.

The question of how long the new tissue that has formed will adhere to the necks of the teeth and be permanent, is an open one. It is just in such cases where we have wasting away, we have a low form of vitality. The gum tissue is non-vascular and gradually wastes away. I have in mind at least a dozen such cases that I have had under treatment for some time. If I am able to check the wasting away I am satisfied.

Dr. George T. Carpenter: I would state that I have never found union between the gum and tooth. The gum will hug the tooth closely and keep out all secretions. We have atrophy of the gum where there is absence of the alveolus and no union. In these the gum remains in place for years, though thin, and it does not recede on account of food passing into a pocket. I have reproduced the gum, which has remained in good condition for the last five or six years, and perhaps longer. I have also had cases that showed slight signs of recession but stimulating the gum checked the receding. A great deal depends on the health of the patient. As I said in my paper, we have to deal with some patients in whom it is almost impossible to reproduce gum tissue, while in others it can be reproduced in abundance.

Dr. G. V. Black: I have had some experience in the restoration of gum tissue, and have used the irritation from metals, sharp edges, etc., to reproduce tissue, particularly in closing

some very difficult openings in the antrum of Highmore, openings that had become permanent, stimulating the growth of tissue by using sharp edges of metals, which was successful. The difficulty I apprehend in these restorations of gum tissue about the necks of the teeth is the failure of permanence. Where we have gum tissue restored in this way without attachment to the root of the tooth we are very much more liable to have suppuration that will destroy it again. An abnormal pocket between the gum tissue and the root of a tooth is a dangerous thing; so much so that I have often purposely destroyed such pockets by cutting away gum tissue and exposing the root of the tooth, preferring that condition to the pocket. These were instances, however, in which there was a constant tendency to the production of pus. Such a pocket as has been described, that is healthy and free from the formation of pus, would not be so objectionable; yet we must retard it as a dangerous thing. Taking my observations of the restoration of contour of gum tissue, for I have had a good many restorations of contour without mechanical appliances, I should expect, if this gum tissue was held in position and the parts were kept in a healthy condition for a considerable length of time, we would find the attachment gradually creeping up on the root of the tooth, and we would have restoration of the attachment to that degree. This comes about slowly. I have seen a good deal of restoration come about in the course of a few years' time in this way without any protection whatever. Restoring the gum tissue of the interproximate space is of every-day observation. I have noted this for a number of years where teeth have been decayed, or fillings inserted and the necks had come together, destroying septum. By separating the teeth and holding them in a natural position with properly formed fillings, we see the gum tissue creeping up and filling the interproximate space, provided the patient is young. If the patient is somewhat advanced in age, there is a tendency for the septum to drop down somewhat, or to shorten, and restoration does not occur so readily. But in your patients this restoration takes place perfectly, but slowly; and these cases are assisted very much indeed by frequent stimulation, and as a stimulant for this purpose I regard cassia as one of the very best.

Review.

To preserve posts in fences and other timber specially exposed to decay, soak for several hours in naphthalin at about 200 degrees F.

ANTRAL DISEASE.

Dr. W. Humphrey, Carroll, Iowa.

Notwithstanding the fact that the American dentist during the last quarter of a century or more has been trying to educate the American people in regard to the value of good teeth, the necessity of prompt attention when any defect is discovered and how to care for them, we are often painfully made aware of the fact that our efforts in this direction have been only partly successful. I had a very good demonstration of the results of neglect not long since when Mr. B——, a man of German birth, came to my office to see if I could find and remove the cause of a large lump on his face which was located on the right side of his nose, about on a level with the floor of the antrum. I asked him how long the swelling had been there; he answered about one year. When asked if it had been painful, he replied that it had been somewhat painful at times. I also learned that pus or a discharge often came from the right side of the nostril. After learning the above, I examined his mouth and found the crown of the first right superior bicuspid, and the first, second and third molars gone, the root only remaining. Mr. B—— stated that a few years back he was troubled severely with toothache. I found the parts surrounding the roots would give, if pressed with a blunt instrument, and that the surrounding parts would bulge, and that the one tooth left on that side, which was perfectly sound, could be moved from side to side or could be pushed up, taking the gum with it, same as when I used the blunt instrument, the bone tissue seemed to be gone. After examining the parts, I removed the roots, but as they did not give an outlet for the pus, I decided to remove the sound bicuspid, which brought with it a piece of process the size of a small hickory nut, the pus having eaten away the bone tissue till this portion was entirely isolated from the surrounding bone. As soon as the tooth was extracted a large quantity of greenish watery substance oozed out. After cleansing the cavity, I cut out the remaining diseased portions of bone, after which I dressed with iodoform gauze, which I changed every few days for three weeks, of course using a disinfectant each time. At the end of this time, as the parts looked healthy, I allowed it to heal and the only bad result is that it will spoil Mr. B——'s mouth for an artificial denture. The great wonder to me is how nature can so protect from harm.

Review.

LOOKING FOR TROUBLE

Probably one of the most frequent causes of the continuance of diseased conditions is caused by the neglect of dentists in making careful diagnoses of diseases present in the mouth of their patients. As a rule the patient is conscious of some source of pain or irritation, which leads him to place himself in the care of the dentist. The dentist corrects the evil, looks for some more cavities, removes a little salivary calculus, and dismisses the patient. He generally fails to study the mouth, with a view to making either esthetic or practical improvements. In other words, he fails to be looking for trouble. A case in point may be cited at this time. The patient has been in the hands of a good, conscientious, honest, and able operator for years, who always "cleaned and filled his teeth." A careful examination at once revealed the fact that one side of the mouth had not been used for mastication for years. There was no complaint as to any particular tooth on that side, on the contrary the patient said the dentist told him everything was "all right." The losses on both sides were equal, and no reason seemed to exist why one should be used in preference to the other. Careful tapping and tests of heat and cold seemed to indicate nothing wrong, but the patient did remember that the insertion of a large amalgam filling in the upper first molar on that side was followed by considerable pain, but that it had been "all right now for years."

It seemed best to tap the tooth; the pulp was dead, the root-canals, while not necessarily filled with offensive matter, contained material in a stage of decomposition. The slight soreness led to the abandonment of this side of the mouth, which was abetted by the difficult eruption of a third lower molar, whose environment was constantly in an inflamed condition. Having found, in addition to calculus, caries and blind abscess, also eruptio difficilis, a search for further discoveries was instituted, and this was rewarded by finding abrasion, two teeth sensitive from erosion near the gingival margin and one tooth attacked by pyorrhea. The latter was confined to about one-half of the circumference of the root of a lateral incisor, and its form was of that apparently inoffensive, yet destructive, nature, which would have resulted in the loss of the tooth, ere the patient could have been aware of the seriousness of the condition.

These diseases were all corrected and the patient instructed to learn the use of the disabled side; at the end of six months (except for the abrasion, which is the result of using one side

only for years,) both sides of each arch are in an equally healthy and useful condition. We suggest to the busy dentist to take time to look for trouble, and the dentist who is not so busy can find no more useful and advantageous employment than to study the conditions which he will find if searched for, and which he must learn to recognize while looking for trouble. Both classes of operators will be more useful to the community.

Editorial in Review.

SAUCER-SHAPED CAVITIES.

Dr. H. A. Cross.

Speaking of saucer-shaped cavities reminds me of something which I wish to present to-night for the purpose of demonstrating manipulation. You will remember that Dr. Hewett read a paper not many months ago before this society in which he recommended a method for putting in amalgam fillings, and some of you may recall the expression he used, namely, of "burnishing the amalgam into the tubuli." That attracted my attention, and in my own experience I have found so many cavities where I could not get an undercut, that if there is any method that I can adopt which will enable me to anchor a filling there without the undercut, I shall be glad to learn it. I have been practicing the method described by Dr. Hewett and as recommended by him. I am favorably impressed with it. I have here two small pieces of ivory. I took a bur, made a saucer-shaped depression, being particular not to make an undercut, and I filled those with amalgam after the plan recommended by Dr. Hewett. You will find on the side of the ivory a little depression of the same form as these fillings are placed in. If you remove the amalgam you have a test for whatever it is worth regarding manipulation, for I think the value of any filling material depends on manipulation. One dentist can put in a good gold filling, while another cannot do it to save his life. As dentists we should experiment with the different kinds of filling materials as well as with the cavities.

Review.

Dr. Cassidy: The distinction between putrefaction and fermentation is this: Putrefaction is alka^lin fermentation, while what we call fermentation is of an acid nature. Both depend on the action of bacteria on extraneous matter. All fermentations, if we restrict the term, end with the formation of an acid.

Putrefaction is the term used to indicate a nitrogenous action, which involves the production of ammonia and its derivatives. Experiments out of the mouth, while they do not prove exactly the same reactions that occur in the mouth, prove some facts. We must acknowledge that ammonia is developed in the mouth by alkaline or putrefactive fermentation. Now, if we put an oxiphosphate filling, carefully prepared, into a tooth out of the mouth, let it stand in a dry place till thoroughly set, and then put it into a five per cent solution of ammonia over night, we shall find the filling disintegrated, the oxid of zinc precipitated, and the phosphoric acid united with the ammonia. Is it not clear that if ammonia is developed in the mouth this reaction will take place in an oxiphosphate filling put into that mouth?

Cosmos.

BACTERIA.

Few grasp the importance, from an economic point of view, of the process of the putrefaction of organic matter constantly going on in the soil. It is one of the great factors in maintaining the circulation of matter, a law on which the perpetuity of all life depends. There is in this universe only a definite amount of matter suitable for the formation of new animal and vegetable life; hence, to permit of the formation of new forms of such life, it is necessary that the dead matter should become broken up, and rendered available for this purpose. Were this law inoperative, the result would of course be that the earth's surface would become encumbered with the accumulation of dead organic matter to so great an extent that animal life would be impossible. Hence it is that, in this respect, bacteria perform services to humanity, as well as to all other forms of life, of incalculable value.

With regard to the occurrence and distribution of these organisms in the soil, investigations have shown that it is almost entirely in their surface portion they are to be found, and that the deeper we go the less numerous do they become. Among the factors determining their abundance, the season of the year is one of the most important. Since among the conditions under which bacteria live one of the most important is the existence of a favorable temperature, we find that they are most abundant during the summer. Indeed, from spring to autumn there is a steady increase in their number. They may be divided into different classes, according to the nature of their products.

A large class oxidize the ingredients of the soil by assimilating organisms exercise a reducing influence that is not helpful and sometimes actually giving off oxygen. We have another class whose action is of a completely opposite character. These organisms exercise a reducing influence that is not helpful to the processes of agriculture. To this class belong those which give rise to a loss of nitrogen from its valuable compounds, and which thus impair the fertility of the soil. But happily the work of this class of organisms is largely neutralized by that of a recently discovered class which enrich the soil in this valuable fertilizing ingredient by fixing the free nitrogen of the air, and thus bringing it within the scope of the plant. Of these three types of organisms examples may be cited; and in doing so we shall select such as have to do with either the fixation or elaboration of that most important plant-food, nitrogen.

Self Culture.

OPENING THE BITE WITH CAP-FILLINGS, PRESERVING THE VITALITY OF THE PULP.

M. F. Finley, D.D.S., Washington, D. C.

A male aged 62 years had every tooth present in the upper jaw, and all in regular position, except the left cuspid, which closed inside. The teeth were so peculiarly worn that when the jaws were closed the upper incisors came in contact with and pressed upon the lower gums, the incisive edges of the lower incisors also impinging on the upper gums when the teeth were closed. The outer cusps of the upper molars also came in close contact with the gums of the lower jaw, forcing the food into painful contact with the gums, causing great discomfort. The molars being sound, with living pulps, it was decided to open the bite by means of cap fillings upon the second bicuspid and first and second molars on the left side lower jaw, the second bicuspid and third molar right lower heavy crowned to carry a bridge to replace the lost first and second molars, the occlusion being raised to correspond with the opened bite.

The occlusal surfaces of the teeth to be capped were ground to nearly a plane surface, and caps adjusted by means of platinum pins entering four holes in the molars and three in the bicuspids, very carefully located in the centers of the sides, avoiding the cornua. The caps and bridge were all cemented to place at one time to avoid irritation by pressure on a single tooth or on one side of the jaw.

Ohio Journal.

METHOD.

One of the deficiencies from which a professional man is liable to suffer is want of method. In the ordinary routine of commercial life, methodical habits are quickly inculcated, for in the bustle and stress of trade and competition the man who does not conduct his affairs in an orderly and systematic manner would soon be outdistanced by his more methodical rivals. The professional man, on the other hand, may lack much of this quality, and yet succeed in his profession fairly well, though in professions, as well as in commerce, business-like habits have their reward. The student's chief aim is to train his hand and his mind; to make the one skilful and the other analytical, experimental, deductive and logical. The business part of his training often does not begin till he is in practice for himself. It is then learned by the wise from experience; by the unwise it is not learned at all.

The folly of training the intellect without also training the orderly and methodical faculties has been often exemplified. A man who uses business-like and systematic methods is much more likely to benefit his fellows, as well as himself, than one who, though he may be more richly endowed by nature, lacks these attributes.

Ours is a profession which is a trying one, both to mind and body. While we are at our work, both hand and mind are continually on the alert; we are working on sensitive material and our attention must never be allowed to wander. Hand and eye must be true and steady, and our best selves must always be at the service of our patients. But hand and eye will not last forever, and it is the usual estimate that the duration of our professional life, on the average, is only twenty-five years. We have heard people remark on more than one occasion that they would not go to a dentist who had called in the aid of spectacles to assist his eyesight, or who was getting elderly. Bearing these facts in mind it is only fair that while we work we should not only be adequately rewarded, but also that by a systematic disposal of our time and money, and by conservation of our health and energy, we should make provision for that old age which, alas, comes too soon to all of us.

Books or charts should be kept of the work done for our patients, not only for their advantage, but for our own. They assist us in making a diagnosis, they acquaint us with the comparative value of fillings, and they sometimes inform us with joy

that the "filling which has come out" was inserted by some other hand. Books also should be kept to inform us of our own affairs, to tell us how much work we have done, what our expenses are, and why they vary, what debts have been collected, and what has been lost in bad debts. If a practice has to be bought or sold, a well kept set of books is a most important matter, and if they are kept systematically, the small time each day spent on them is well expended. The point has often been argued as to which is the better for a youth, a business training or a classical education. We do not take on ourselves to decide. One will make him a successful man, but the man who is "successful" and nothing more is a poor creature; the other will enable him to go through life with wider sympathies and perhaps with tastes and aspirations he can never satisfy. We think the happiest man is the one who being possessed, though only perhaps to a moderate extent, of both, makes each control the other, bearing in mind Herbert's words:

"In thy thriving still misdoubt some evil
Lest gaining gain on thee and make thee dim
To all things else."

Editorial in British Journal.

THE USE OF NON-COHESIVE GOLD.

Dr. C. N. Johnson.

As to the use of non-cohesive gold along the cervical margin, as advocated by many members of the profession, it is used in such a place, not so much because we cannot get adaptation with cohesive gold, but because in placing a layer of non-cohesive gold and condensing the cohesive gold upon it we have a cushion for the cohesive gold to be condensed on, and can mallet over that part of the filling with less danger of injuring the enamel margin than we could if we started with cohesive gold and began our condensation in the early part of the operation. That small piece of non-cohesive gold serves as a cushion to protect the margin from injury from the malleting force. We do not want to use much non-cohesive gold in building up proximal fillings in molars and bicuspid. The only non-cohesive gold I would use would be the first layer. From that point up I would use cohesive gold on account of its greater density. But I do not want at this time to enter into a discussion of the relative merits of non-cohesive and cohesive gold.

Review.

CAOUTCHOUC AND GUTTA-PERCHA CEMENTS.

A gutta-percha cement for leather is obtained by melting together 100 parts of gutta-percha, 100 parts asphalt or pitch, and 15 parts oil of turpentine. It is to be used hot.

Elastic gutta-percha cement, especially for fixing soles to shoes, which does not crack in bending, on account of its great extensibility, is prepared by dissolving 10 parts gutta-percha in 100 parts benzine and pouring the solution into 100 parts linseed oil varnish, shaking well. The leather must be roughened before using this cement, in order to insure greater durability. By a caseine-borax cement a handsome surface gloss is imparted to the leather. The borax is dissolved in boiling water and the borax solution poured into freshly prepared caseine. The durable thick cement is very serviceable.

Good caoutchouc cements, for rubber strips or rubber goods on metal, are obtained by dissolving shellac in ten times its weight of ammonia. After standing for three to four weeks a transparent putty results, which is used without heating. The cemented places soften at first, but become hard and firm after evaporation of the ammonia, which may be assisted by heating. This cement is water-tight and gas-proof, and is also useful for hard rubber articles. A cement made of a mixture of gutta-percha with asphalt is serviceable for the same purpose. This has to be applied hot and the pieces are to be pressed together.

Very useful cement for leather belting is manufactured by kneading 10 parts carbon bisulphid and 1 part of oil of turpentine with gutta-percha till a thick paste results. The portions of the leather where the cement is to be applied must be unoled and roughened; the cement is put on and the ends are pressed together till the binding agent has become dry. Directions for caoutchouc cement are: 100 parts finely cut caoutchouc, 15 parts rosin, 10 parts shellac, dissolved in sulphid of carbon. One part caoutchouc, 7 parts mastic, and 50 parts chloroform, left to stand several weeks.

Cement for rubber boots, etc: (1) 10 parts caoutchouc dissolved in 250 parts chloroform; (2) 10 parts caoutchouc, 4 parts rosin, 40 parts oil of turpentine, mixed and dissolved. For use, pour together equal parts of both solutions. Both ladies' and gentlemen's shoes may be soled by sheets prepared specially and gummed on with this cement.—*Translated from the Färben Zeitung.*

FEARFULLY AND WONDERFULLY MADE.

Few people are aware of the wonderful engineering skill and ingenuity with which their bodies are constructed. If patents were taken out for all the clever contrivances to be found there, it would keep the staff of the Patent Office going for some time.

Who would think that in his eye there is a block and pulley, or "tackle" as the sailor calls it, as complete and efficient as that with which a ship hoists her mainsail? There it is, however, and whenever you look at the tip of your nose the muscle that moves your eyeball works in it. There are several of these pulleys in the body.

Another clever dodge in Nature is shown in the bones of the face. Accomplished engineer that she is, she always uses the smallest quantity of material sufficient for strength. In making the bones of the face she wanted a large surface to which to attach the muscles; but as she didn't wish to encumber us with heads as heavy as an elephant's, she burrowed hundreds of little holes in the bones, called air-cells, and thus secured strength, large surface and lightness. In the same way she made the long bones of the legs and arms hollow in the middle. What a saving this is may be understood from the fact that a hollow shaft of bone or iron—or any other substance—is about twice as strong as a solid shaft containing the same quantity of material.

When you get a severe cold you are apprised of the presence of another cunning device—the Eustachian tube. This tube is two inches long and passes from the inside of the ear to the back of the mouth. It was put there to keep the air at the same pressure inside the drum as outside. Otherwise there would be no vibration of the drum and you would be almost stone deaf. When you get a bad cold this tube sometimes becomes inflamed and blocked, and you are made quite deaf.

Adam's apple is now a useful organ. It serves as a sort of storage cistern of the blood for the supply of the brain. When the heart sends up too much blood Adam's apple intercepts it, or part of it; and when the direct supply from the heart temporarily runs short Adam's apple gives up its store.

The liver is a wonderful organ, containing facilities of several kinds. But perhaps the most wonderful thing in it is that part set aside to look for and arrest poisons.

All the food that you eat, except the fat, has to pass through the liver before going to the heart and body generally; and in

the liver there appears to be stationed something in the nature of custom officers, who examine every bit of food and remove from it all substances dangerous to the body. But they are capable of dealing only with the small quantities in ordinary food, and when you eat poisonous mushrooms or mussels they are quite overpowered.

Another protection from danger is afforded you by the supply of a small quantity of hydrochloric acid to the stomach. There are little machines in the stomach specially designed for the manufacture of this acid from the salt you eat, and they are so regulated that they produce a quantity equal to one-fifth of one per cent of the contents of the stomach. Experiment shows that this is exactly the percentage required to destroy the thousands of microbes that we swallow in our food. But for this thoughtful provision of Nature we would probably get a new disease with every meal.

Most people know the use of the epiglottis, which saves us from imminent death every time we swallow a bit of food. At the back of the mouth the air-passage and food-passage cross each other, and whenever we swallow food it would inevitably go into the windpipe and choke us, only that this little body pops down and covers the entrance. It is like the policeman who regulates the traffic where streets cross.

The semi-circular canals, for centuries a physiological puzzle, are an extraordinary device for enabling us to keep our balance. They are little channels, hollowed out, in connection with the ear, in the bones of the head, and partly filled with fluid lymph. As our head or body sways the fluid moves, acting like a spirit-level, and informing the brain whether we are standing on the perpendicular or at a dangerous angle.

One of the most valuable of all inventions for our comfort and safety is the perspirative gland. It acts like the safety valve of a boiler, letting off heat when we are becoming dangerously warm. If our temperature rose seven or eight degrees we should not have twenty-four hours to live. The value of the sweat-gland is therefore obvious. In fact, without it a football or cricket or rowing match would be out of the question, and we could not safely walk at a speed of more than a quarter of a mile an hour. Nature has taken good care, however, that we should not run short of these useful organs and has given us no less than 2,500,000 of them.

So inventive was Nature when constructing our body that the difficulty is to stop enumerating her clever ideas. She saw

that we would very soon grow tired if we had to be held up by two legs by means of muscular effort, so she made the hip-joint air-tight, and the pressure of the air alone keeps the leg in its place. At the same time, although she has not discovered ball-bearings, she made the ball of the leg bone and the socket of the hip so smooth and oiled the joint so well that the friction is practically nothing.

When the spinal canal in the backbone was made, great pains had to be taken, for, while it consists of many pieces and is freely movable, it contains the precious spinal cord, one nip of which would be fatal. The measurements are so accurate that there is no danger of such an event. Wherever there is much and free motion, as in the neck, the canal is large and open and a nip is impossible.

Again, the heart and lungs are, of course, the very basis of our life. They are in constant motion, and if allowed to rub against the chest walls around them, they would either get inflamed or wear away by friction. Nature has, therefore, surrounded them with a double sac, and between the outer and inner layers of it she has placed a quantity of lubricating fluid.

But the most remarkable of all devices is that for splicing broken bones. The moment a bone is broken a surgical genius is at once dispatched from the brain to the spot. He proceeds to surround the broken ends with a ferrule of cartilage. This is large and strong, and takes quite a month to complete. When the two ends are held firmly and immovably in place by the ferrule, this mysterious surgeon begins to place a layer of bone between them and solder them together. And when the layer is complete and the bone securely welded, he removes the ferrule or callus, just as the scaffolding is removed from a finished building. Often a bone does not get broken for two or three generations, and yet this power to form the callus and knowledge of how to do it is never lost. *Scientific American.*

DANGER FROM AIR INJECTION.—As for ordinary hypodermic medication, or serum administration, we believe the danger from air injection is *nil*. In using the Koch syringe for giving small measured quantities of serum, toxins, etc., it is customary to be sure that the entire amount of fluid is injected, to allow one or more small bubbles of air to escape from the needle. During the past six years I have made thousands of such injections into rabbits, guinea pigs, rats and mice, and have yet to see any harm.

Dr. McClintock, in Jour. Amer. Med. So.

DISCOLORED TEETH.

Dr. F. B. Noyes, Chicago.

All teeth that are discolored are without living pulps. Histologically they have no cells, pigment cells or any others. The dentin consists of formed matter which has been made by cells. It seems to me that the discoloration of teeth is caused probably by two conditions. The tooth structure, the dentin is open, it is traversed by the tubuli; now the tubuli may be filled with a substance which has a color, and which makes the tooth a different color from the rest of the teeth in the mouth, because the tubuli are filled with it. To bleach that tooth you must destroy the foreign colored substance which fills the tubuli.

Is there not another possibility for discoloration of the teeth, namely, that the dentin itself has been affected by something, so that it is of different composition, and the resulting compound of the dentin and some foreign substance has a color different from that of normal dentin? It stands to reason that one of these cases would bleach more easily than the other. I think very often you have the tubuli of the dentin filled with blood pigments which may be cause of discoloration, which can be bleached much more easily than in the second condition in which the dentin itself is chemically compounded with some substance which gives it a new composition and a different color. I do not understand the use of "pigment cells" in relation to the teeth in this connection at all. If the dentin is affected by a substance which combines with it, it may be less deeply affected, but it is a homogeneous substance which is affected, and not individual cells. Just the same as you may have an ivory billiard ball stained part way through, or all the way through, but it has no stained cells, it has not pigment cells, but it is the staining of a definite substance, just as you have any other chemical substance which is changed in color by combination with another substance.

Dental Review.

Put some oxichlorid of zinc at the entrance of the root-canal. Then wrap one or two thicknesses of No. 10 gold loosely around the end of a broach, dip it in oxichlorid of zinc and push it carefully to the end of the canal. Withdraw the broach, leaving the gold and oxichlorid. By this means all air is excluded and the canal thoroughly filled.

J. N. Crouse, International Dental Journal.

FLOSS SILK.

How often writers and speakers fail to mention floss silk as a means of dental prophylaxis. The tooth-brush is stressed, even to the number and shape of the rows of bristles; while the floss silk, which is far more important, is not mentioned, or if mentioned, only in a casual way.

Instructions at the chair are given in the use of the brush, which is well, but the silk should receive the same attention. Really, if one is to be neglected let it be the brush, which does not reach the seat of nine-tenths of the decayed places, however faithful and careful it is used. Impress on the patient the importance of keeping accumulation from between the teeth, where most caries are found. We have been for years using the Corticelli embroidery silk, found at dry goods stores, on small spools of about two and one-half yards each, and which sell for one cent. We use this waxed, at the chair, and present a spool with instructions how to use, and to wax, to each new patient. So long and persistently have we urged this in our practice that patients say they feel uncomfortable if their teeth are not "cleaned between." Especially should patients for whom approximal fillings have been made be urged to keep them clean between. Tell them teeth cannot be made better than they were before they decayed, and if the same conditions are allowed to exist after they are filled that existed before, decay will surely recur around the fillings.

With many, if this is shown in the light of dollars and cents, it is more impressive. But with most intelligent people there is a desire to keep the teeth clean, and they only need to be given the proper directions for doing so, and will do it gladly.

Editorial in Dental Weekly.

Dr. Donnally would like to see the dental and medical profession more closely united, but expediency forbids. The idea which led to the separation of the two professions has been operating for years. The degree of D.D.S. from the better dental colleges of this country is as high a degree as the M.D. from the medical colleges of equivalent standing. It costs as much time, as much brain, as much hard study, and as much concentration of mind and effort to acquire it. More than this, the holder of the D.D.S. is better qualified to practice his specialty than are the specialists in any other branch of the healing art.

Cosmos.

A COMBINATION CROWN.

There is one crown which gives the strength of the banded crown, and at the same time gives all the advantages, as regards appearance, of the porcelain crown, and that is made by using a combination of the band and the English tube tooth. It is made as follows:

Use a band as usual; cut it off at gum line; solder on a piece of 27 gage clasp metal. Grind Ash tube crown to place. Mark place on cap where hole in crown comes; drill hole size of tube wire, pass wire through crown and into root as far as it will go. Cut wire a little longer than needed; remove cap and porcelain crown. With wire hold cap and porcelain in contact. With wire in position, press Melotte's moldin into root end of cap and around pin and over the edge of band. Use small amount of moldin, press on asbestos board, so it will stay upright while soldering. Remove porcelain crown and put Parr's flux and solder around pin, and heat up at once and solder. The moldin will hold the parts firmly in place, and the work can be done in a few moments, no delay for heating. Put the crown and cap together and hold firmly in contact. Heat in flame and flow sulfur around post and between porcelain and band. Set on root as usual.

Dr. Cook, in International.

A NEW FUNCTION OF THE ANTRUM.

In the text-book we have been taught that the antrum has two functions, namely: the lubrication of the nasal passages, and imparting warmth to the air as it passes into the lungs.

These so-called functions have seemed to us as extremely absurd. In the first place, the Schneiderian membrane is fully capable of supplying the necessary moisture to the nares; and in the second instance, the "crow-quill size" of the middle meatus is totally inadequate to afford much, if any, warmth to the large volume of air constantly passing its orifice. We have long entertained the belief that the antra were devoid of any function whatever, but in the divine plan were intended as an economizer of bone tissue; but above all, the better to minimize the consequences of fracture of the superior maxille.

A fall or blow on the outer wall of the antrum rarely involves its posterior aspect or immediate articulating bones; but were the maxilla solid bone structure, a fracture of those bones

would be attended with more serious results than any that have yet been recorded.

In support of this proposition we direct attention to the well-grounded theory respecting the function of the sutures of the cranial bones.

Not to discuss the subject further by seeking analogies, we note a beautiful theory recently advanced by Dr. Sudduth, in which we heartily concur.

Speaking of the "Antrum and Vocal Resonance," he declares that the air contained in these cavities vibrates in harmony with the tones produced by the vocal cords. That this vibration is most appreciable when the tones produced are full of melody, as in certain kinds of church music and negro melodies. That it is more prominent in singing than in speaking, unless a special declamatory effect is attempted. That there is a type of individual to which the successful vocalist and orator belongs, and which is indicated, among other things, by a considerable but harmonious development of the maxillary sinuses. Their variation in the size and shape of the resonant cavities when present undoubtedly affects their value as resonators.

J. A. C., in Dental Weekly.

GOLD PLATING SOLUTION

A half an ounce of gold-plating fluid was given me, and I was told to try it. It proved very satisfactory, especially in plating wire appliances that I use for regulating teeth after the Jackson method, or plating instruments that may suggest themselves to any of you. You can plate your syringe tip, or your mirrors, or your pliers, or anything you like, with gold. It stands well, and you can place as much or as little on the surface of the metal as you like, and I see no difference in its taking effect, either on piano-wire, or brass, or German silver. The instruments come with the material. It is furnished and prepared by William J. Pohlman, Woodbrook, Maryland. The expense of a two-ounce vial is two dollars and a-half. Just about how much that would plate I cannot state. I plated nearly everything I had in the office that I could plate, and I still have much left. If you have a regulating appliance, for instance, it can be plated with perfect ease inside of five minutes, provided the surface is polished. The solution is in a concentrated form. You dilute with water, warm it, place in a porcelain or glass

vessel and place your article in the fluid, and then hold a small piece of zinc, which comes with the package, in contact with the thing to be plated. Instantly you have a coating of gold on whatever you wish to plate. It also deposits the same amount of metal on the zinc, and, that, of course, is lost, as each time you need to clean the zinc thoroughly. It is all done in a moment almost. I have procured some of the silver plating also, but as yet have not used it. It stands perfectly well in the mouth. You can solder gold on steel wire, and it seems to be very nice. By giving piano-wire in the mouth a gold finish in this manner, the patient appreciates it and it is very useful.

Dr. Gaylord, Cosmos.

BUNSEN BURNER FOR ACETYLENE.

At a recent meeting of the Chemical Society, Mr. A. E. Munby, M.A. described and exhibited a Bunsen burner he had devised for the consumption of acetylene. The disilluminating of the acetylene flame by the introduction of carbonic acid has been described by Prof. Vivian B. Lewes; but carbonic acid was expensive and it greatly moderated the temperature of the flame. Acting on a hint from Mr. T. Fletcher, of Warrington, Mr. Munby endeavored to so alter the dimensions of an ordinary Bunsen burner that it should serve for use with acetylene.

He found that the burner-tube should be narrowed to an internal diameter of 5mm., and the gas should be supplied to it at a pressure of not less than 6 in. of water. The burner then consumed about a cubic foot of acetylene per hour. The flame became luminous when the gas supply was considerably diminished, owing to insufficient air being then drawn through the inlets. In practice, acetylene was found to be twice as effective for boiling water, for instance, as the same volume of coal-gas. The burner should be very useful in laboratories removed from town gas supplies, as an acetylene generator is not very costly, and the connections are said to be really made.

Invention.

Life is what we make it; and so is our work—cheery, bounding, a delight, or gloomy, irksome, heavy. The same life and the same work, buoying us up and giving us ever so much pleasure, or depressing our spirits and keeping us under a pall of discontent. Is it possible we can have our choice?

PRACTICAL POINTS.

By Mrs. J. M. Walker, Bay St. Louis, Mississippi.

To Dry the Root of a Tooth.—Roll a piece of copper wire so that the small end is fine enough to penetrate and flexible enough to follow the canal. Insert the wire with the end protruding sufficiently to enter the bulb of an Evans' root-drier, from which the point has been removed. Heat the bulb quite hot; let the protruding end of the copper wire enter the hole in the bulb. The heat will be carried to the extreme end of the wire and give a condition of dehydration in the root-canal and tubuli such as cannot be obtained in any other method.

Dr. Jarvie, in International Dental Journal.

Cataphoresis—Treatment of Chronic Peridental Inflammation.—Apply dam or napkin, flood cavity and canals with alcohol, dry thoroughly. Saturate a pledget of cotton with the antiseptic to be used (oil of cassia, chlorid of zinc, acetanilid, etc.), place in cavity and apply platinum point positive electrode. Raise the current to 15 or 20 volts—about fifteen minutes sufficient. Follow by application of iodine cataphorically to gum for a few minutes. Second treatment rarely necessary.

John M. Fogg, in Cosmos.

Insert in the canal a piece of copper wire small enough to penetrate to the apex and sufficiently long for the protruding end to enter the bulb of an Evans' root drier. Put into the cavity a sufficient quantity of paraffin mixed with iodoform. Heat the bulb of an Evans' root drier and place it on the end of the protruding wire, the heat being conducted to the extreme end of the wire melting the paraffin. Withdraw the wire, and capillary attraction will draw the paraffin into the space left vacant.

Dr. Jarvil, International Dental Journal.

Fill the desiccated canal with melted paraffin and pack in a gutta-percha cone of proper size and shape, avoiding excess of paraffin.

E. C. Kirk, Ohio Dental Journal.

Mix aristol and paraffin by application of slight heat with spatula till the mass assumes a dirty straw color. Will not deteriorate with age; can be kept in glass or pasteboard box. Apply dam, desiccate thoroughly, roll cone of aristo-paraffin and place in canal, touch with heated instrument or root-drier, when it will

fill canal by capillary attraction. If forced through foramen will not produce irritation, but will be absorbed by the tissues.

H. B. Hickman, Dental Cosmos.

Paraffin, in combination with a small quantity of aristol, has been suggested by Dr. Kirk, especially after the use of sodium-peroxid, the latter freeing the ends of the tubuli and canal of their organic contents, allowing—with the aid of a heated root-canal drier—melted paraffin to be flowed into the ends of the tubuli or a canal too minute to be otherwise entered.

Geo. Evans, Dental Cosmos.

If the canal is not open at the foramen, fill with creamy oxichlorid of zinc, into which plunge cold stiff points of gutta-percha. When these points are surrounded by an envelope of oxichlorid of zinc the roots remain sterilized, the combination making almost an ideal root-filling.

S. G. Perry, International Den. Jour.

Use gutta-percha cones, not started into the canal with pliers, and a hit-or-miss effort made to force them home, but stuck onto the end of a properly shaped root-canal plugger, the size having been ascertained by trial, and sent to place with certainty. The canal is to be first well moistened with oil of eucalyptus.

G. V. Black, International Den. Jour.

If we have just devitalized and removed the pulp, we swab out the root-canal with a saturated solution of tannic acid in glycerol, after which we heat a tiny piece of pink gutta-percha and pass it quickly to the apex of the root; then we fill the canal with any approved filling material, preferably cement.

W. A. Mills, Dental News.

Infected root-canals may be safely filled with cotton saturated with a thirty-three per cent solution of formol, hermetically sealed in.

Dr. de Marion, Dental Cosmos.

Admitting that there may be a small amount of tissue that needs mummifying, I hold that there is nothing better for the purpose than chlorid of zinc; and that, combined with the oxid, makes as good a filling as can be used in root-canals.

H. T. King, Dental Review.

Bees-wax incorporated with fibers of cotton or floss silk makes a perfect root filling. It is non-irritating, non-conducting, easily and quickly manipulated, a perfect barrier to microbes; fire alone can destroy it. Introduce a heated broach to flow the wax.

Southern Dental Journal.

In large open foramen, incorporate a little finely pulverized iodoform in the cement with which such canals should be filled, because of beneficial action in the tissues about the end of the root.

Dr. Miller, Items of Interest.

I use a paste made of equal parts of iodoform and oxid of zinc, mixed with oil of cinnamon. The cinnamon deodorizes the iodoform almost completely. This paste can be easily introduced on a smooth broach and pumped into the canals. Press a pellet of cotton firmly on the excess at the mouth of the canal, expressing the oil of cinnamon and packing the root filling firmly.

N. C. Leonard, Dental Headlight.

R. Oil of cinnamon.....	$\frac{3}{4}$
Gaultheria.....	$\frac{3}{4}$
Carbolic acid.....	$\frac{3}{4}$

Make into a creamy paste with oxiphosphate. Pump into canal and press home with cone of oxiphosphate.

J. W. Griffith.

Let the last application prior to filling be of eucalyptus, leaving it in the canal that it may saturate the tooth-substance. Then introduce chloro-percha in a semi-liquid condition, followed by a cover of slow-setting but good quality of cement, forcing it into the root while in a plastic condition, forcing the chloro-percha before it. Much greater force can be exerted as the cement hardens than upon a gutta-percha cone.

L. Ottofy, Dental Review.

I always fill the pulp cavity with osteo-plastic, that is the thing as I understand it, and there is nothing better. It acts as a disinfectant, and is an excellent filling for the root.

Dr. Clowes, Dental Review.

Work down to the apex with fibers of cotton on a broach mixture of camphor-phenique, iodoform and zinc oxid. Then insert gutta-percha cone moistened in chloroform.

Chas. Harker, International Dental Journal.

Dry canals thoroughly with alcohol, inject mixture of two parts ether and one part alcohol. Fill with celluloid dissolved in alcohol and ether.

Geo. Allan, International Dental Journal.

Suggestion.—Fill canals with unvulcanizable rubber with chloroform as the solvent.

J. A. Truman, Dental Review.

I use the balsam del deserto. A regular cautery instrument with a little iridium tip to it, which can be placed in any position you desire, will carry the balsam right where you want it.

Dr. Delos Palmer.

DR. JARVIL.—To my mind this is the greatest advance yet made in root-canal filling. By inserting this small broach-shaped wire and turning on the current you can get the extreme end of the root as hot as you wish.

Dental Cosmos.

Fill with yellow wax, using heated root drier to melt the wax in the canal. Force a lead point into the melted wax.

R. R. Freeman, in Southern Dental Association.

Prepare pure bees-wax in a water-bath, to which is added an antiseptic. Roll it down to an absolute point and pass up as far as possible into the canal. With a heated Evans' root-drier drive the wax into the tubuli, adding wax till the canal is full. Then send a heated copper point right to the end, letting it protrude slightly into the pulp chamber. Bees-wax does not expand nor shrink, and is not affected by acids or alkalis.

Dr. Ives, Ohio Dental Journal.

Saturate the canal walls with base-plate wax dissolved in chloroform, eucalyptus or one of the essential oils. Fill canal with points made of the same. Chill the points and carry into the canal with cold instruments. Penetrate the mass with a heated root-canal drier, adapting the wax perfectly to the walls of the canal and tubuli. Rotate the drier and remove with a pumping motion. Condense the filling with a ball of cotton forced down over the mouths of the canals.

L. C. St. John, Dental Review.

Try powdered salol. Grind the crystals in a mortar to a fine powder; place a lot in the cavity; use as large instruments at first as will enter the canal, then smaller ones to carry it further in. Don't melt it. Needless to say the canals must be dry.

"C," Dental Review.

In root perforation pack in the canal and against the pericementum, at the point of perforation, a small quantity of salol, and over this place a cone of zinc phosphate. Of course, the salol disappears, as it always does after a period when used as a canal filling, but while it lasts it performs its office as an un-irritating antiseptic.

Dr. Register, International Dental Journal.

Of all the abominable things that have been offered as a root filling salol is the worst. Remove the filling from over any root so filled and the canals will be found as free from filling as if nothing had been put into them.

Dental Weekly.

ITEMS.

Take equal parts salol and paraffin. First melt the salol, then add the melted paraffin. The salol is the vehicle for retaining the integrity of the paraffin.

W. F. Lewis, Pacific Stom. Gazette.

* * *

In regard to gutta-percha, using oil of cajeput on the surface of the filling of a cavity before gutta-percha is introduced produces a cohesion of the mass of gutta-percha to the teeth, and it is very valuable for this purpose.

A. E. Matterson, in Review.

* * *

Man's inherent right to become superior in his vocation is imited only by his desires and capabilities; for no allegation is more positively proven than that "As a man thinks, so is he." One can rise no higher than his own conception of his possibilities.

W. D. James, in Review.

* * *

The National Association of Dental Examiners has not assumed the duty of fixing the standard of the college courses, but it has taken the highest standard colleges as the best that could be had at the present, and has endeavored to bring all of the colleges up to the level of the best. The Association of Faculties has worked with the Examiners in harmony usually, and our aim has been, and is, to bring the two associations into closer harmony.

W. Donnally, in Cosmos.

* * *

THE OPEN DOORS.—How different now are the ways of dentists as compared with the pre-association period. All things are now held in common. No secrets, no locks, no spies. Fellowship is a wonderful developer of human kindness and sympathy. Often a man prejudged as mean will, on closer acquaintance, prove to have one good trait of character. The selfish man is the meanest man in the world. The greatest fools of the earth are those who cannot be taught and have not realized that they know nothing absolutely. A man is not on the road to knowledge till he finds out his empty condition intellectually. Then he hungers and thirsts for knowledge.

Western Journal.

Dr. E. Lawley York: It has struck me that the prevalence of caries in some mouths might be attributed to the conditions of the secretions. In mouths that are markedly acid like my own, caries would be seldom or never present. I base my theory on the fact that in artificially cultivating microorganisms one of the most essential things is to have your culture media faintly alkaline; if at all acid the growth of the majority of organisms is retarded.

Review.

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It is easy enough to run off a page or two of manuscript without thought, but it is not possible to prepare an essay of five or six pages that will be interesting and instructive to a reader unless it shall have a central dominating thought. There is a growing tendency to write much to fill space, and too little effort made to make it full of substantial reasoning. Let us have the results of deep thinking and hard study.

Editorial in Review.

* * *

Dr. Bonwill is back with us again after his four months' trip abroad. He says he has talked almost incessantly ever since he left America, and we don't doubt it. Some of us do not agree with the Doctor in all that he talks about, but he has done much to bring dentistry to the high place it now occupies, both mechanically and artistically, and should have the full credit of it. Who of us is not enjoying something to-day which was evolved from Dr. Bonwill's fertile brain.

Digest.

* * *

In regard to filling materials, I have made a combination in the way of a temporary filling which in my hands has been very useful, namely, using soft gold near the cervical margins and filling the remainder of the cavity with cement. After a time I discovered that the tooth was ready for a permanent filling; that the gold had prevented any disintegration on the cervical margins of the teeth and decay has not progressed any further, and I have gone on and performed my operation with whatever material for permanency I needed.

J. H. Woolley, in Review.

* * *

Young man, do not let an opportunity pass to join an active dental society, two or three if you can. You will never regret it, for it is "the bread of life," professionally speaking. No young man can truthfully say that associations are of no benefit to him; for when a dentist devotes all of his time within his own office

he simply subsists on what stored knowledge he possessed when he left college. Every one of a social nature, naturally enjoys the society of his friends and neighbors, but the dentist who would rise in the profession must read dental journals, attend dental meetings, write papers on dental subjects, discuss other papers, and become active in the work. If he does not thus assist his associates he is the one who suffers most.

W. D. James, in Review.

* * *

SOME PECULIARITIES OF THE JAWS.—There is in 95 per cent of mouths more depression in the region of the left bicuspid than in the right. The process is shorter on the left side than on the right, so that if the anterior teeth are arranged close to the gum they will be too short on the left when placed in the mouth.

In most mouths the teeth on the left side of the lower jaw in the region of the cuspids are higher and more prominent than on the right. The left side of the lower jaw recedes farther from the median line than on the right.

L. P. Haskell, in Dominion Journal.

* * *

WHY EXTRA DISINTEGRATION AT THE CERVICAL BORDER?—The finish of the filling has much to do with it. If a little roughness or imperfection is allowed to remain in a filling under the gum-margin, it sets up an inflammation of the gum. The process of fermentation, called putrefaction, follows, and the characteristic ending of putrefaction is the production of ammonia or some of its derivatives. The ptomaines, for instance, those poisonous alkaloidal bodies, are developed at that point more than elsewhere,—probably more by the inflammation in the gum than from the debris, or food, or mucus which may lodge there.

J. S. Cassidy, in Cosmos.

* * *

In prosthetic dentistry the use of high fusing porcelain in crown- and bridge-work is made more generally possible by the introduction of electric furnaces. Beautiful effects in the reproduction of natural appearance of crowns and bridges is in this way rendered better and more presentable than by the use of gold. Time will determine as to the durability. These electric furnaces ought to bring continuous gum dentures into more general use. These furnaces can be used with either the direct or alternating electric current, and as nearly every town from 10,000 inhabitants upward has either one or the other systems, the use of electric furnaces should become quite general.

E. H. Allen, in Review.

EDITORIAL.

OUR GRAND POSSIBILITIES.

Few of us awake to our great possibilities. We go through life as a pigmy, when we were made for a giant; we grovel in the dust as a worm, when we ought to stretch up with a strong back bone, head and shoulders above all other created beings; we are contented with toys and bubbles, when we might grasp the spheres and walk and work with angels. If the noble horse knew his strength he could not be kept as a mere beast of burden; and yet man, who is the chief of all creation, voluntarily stoops to be a menial.

There is something grand in the inspired description of our creation: "God created man in His own image; in the image of God created he him." And he gave him dominion over all the earth.

But how has the mighty fallen! Yet not necessarily or hopelessly or inevitably. It will not do to charge all our troubles and weaknesses and sins on our first parents. Because Adam lost his innocence we need not lose our virtue. Virtue is innocence tried; and that man who is brought to the test and triumphs is greater than the child in his innocence.

We have no excuse for being mean, and contemptible, and useless. If we *will* we may stand up in the dignity of our manhood and be *men*,—noble men, great men, powerful men—the glory of all the world. The world itself was made for us, and we may possess it, if we will. This is our place, our heritage, our sure possibility—*your* possibility and mine. Of course, the child cannot be a man without growth, the man cannot be a giant without disciplin, and the giant cannot be a success without the exercise of his powers. But my, what possibilities are before the child, and the man, and the giant! And yet each may be a useless thing—live, grow, die, and be forgotten—lost. Destiny for greatness or nothingness is in our own hands.

The world has not too many workers, but too few that work; the work is not too difficult, that any should stand idle in the market place, but there are too few workers skilled to do their part; there are not too few places of profit and honor, but too few prepared to fill them. We are each sent into this busy world to do specific work, and soon we are called back by the sender to give an account of what we have done. Let us be able to say: "We have fought a good fight; we have finished our work." Not the work of another, but our work. Not what would be another man's best; for, as the sun transcends the moon in brightness, and as the stars differ in their shining, so do we differ in capacity, and power, and sphere. But in the sphere in which Providence has placed us, we may do *our* best, as great men can do their best; and doing our best where we are, we may find our "path growing brighter and brighter, even to the perfect day."

WEEDS *vs.* PLANTS.

A weed is a plant in disguise—a plant or shrub out of place, or growing where it is not wanted. We call them useless and a pest, but they may bear flowers or fruit, or have medical qualities, which would well repay astute observation. And after all, these "weeds" only seek to occupy ground not tilled "by the sweat of the brow of man." Their beauty and usefulness is often as wonderful as their number and variety. We speak of land bearing nothing but weeds as barren, but generally the rankness of weeds shows how luxuriantly plants would grow. Every year some "weeds" are found to be so ornamental or useful that they are no longer ranked as weeds. Many of our useless weeds and barren shrubs are by culture developed into nutritious fruits or vegetables. Thus tough, bitter roots have been changed into sweet, succulent bulbs; dry, tasteless stems into crisp, juicy stalks; weak, immaturing annuals into strong, fruit-bearing bi-annuals; musky, tasteless, useless shrubs into graceful trees bearing luscious nuts or fruit. From thence have come our potatoes and tomatoes and most of our popular vegetables, and our

peaches and pears, our oranges and lemons, our berries and nuts, also most of our choicest flowers.

We have human weeds which are merely plants out of place. They are a pest and a nuisance because they are allowed to grow wild. Many of them could be made shrubs of beauty and plants of usefulness if improved by culture. Many a boy and girl now going to the bad, might be made citizens of worth and ornament to society, if their rankness of growth in deviltry was displayed in a growth of goodness. There is not so much difference in the native capacity and characteristics of these human weeds, and of plants fit for a palace. The main difference is in their surroundings and culture. Give them a chance to grow and strengthen, and to develop some good quality—dig about them, trim them up, tickle the fallow ground, give them respectable surroundings, and instead of being rank, noxious weeds they will soon show qualities of usefulness and beauty.

Many of us let our children come up—as Topsy says—like weeds, and then expect from them the fruit of well-attended plants. They are never trimmed and straightened up, and yet we expect them to look symmetrical and dignified. We neglect them till they are shaggy and ill-formed, and look for some miracle to change them into delicacy and grace. The change must come by giving them place and culture.

There are instances where even weeds take on such a healthful growth, and useful development, that they are well worth transplanting; and we have seen children who have been brought up in squalor and abandonment, rise so far above their environment that they are no longer choked by lesser weeds. Drawing to themselves all of good in soil and air, they become giant trees well fitted for lawn or bower.

No doubt most of our dental colleges give instructions that should make their graduates competent practitioners, or at least sufficient to lay a good foundation for such a practice; but really we come across some that are like whistles made of pigs' tails—poor enough.

WHAT OF THE RACE?

It is very aggravating to see others pass us in professional skill and popularity. Yet it is sometimes done so easily we are ashamed of ourselves. We perhaps work much harder than they and take more pains, yet their work is better than ours; their patrons, too, are of a better class, and their prices double ours. They are climbing up the hill of fame with ease and celerity, while we are still struggling at the base.

Why is all this? Simply, perhaps, because they are smarter than we. This may not be our fault so much as our misfortune. We were simply born so. Let us not fret. If we do our best, we shall have our share of life's laurels. If we cannot make as much money as our sharper friend, we can, perhaps, by economy, industry and cheerful persistence, save as much. Let us console ourselves with the fact that, even with moderate abilities, we may have a good degree of success by vigorously applying the rules of strict business principles to our every-day life, and seeking to improve.

"Give to the winds thy fears ;
Hope, and be undismayed."

For "the fearful and unbelieving shall not eat of the good of the land," but "all things are possible to him that believeth." "Hope is an anchor to the soul, both sure and steadfast, reaching to that within the veil."

Let those fear who have zeal without knowledge, daring without strength, and venturesomeness without preparation.

But if you have a consciousness that you deserve to live, *live*, and live with all the consciousness of right and power. If you know you are in the right direction, do not falter, but pass on boldly, with determination and invincibility. If you have won a position of trust and responsibility, do not doubt, but stand there firmly, act your part manfully, and fulfil your destiny heroically.

A DENTAL ABSCESS.

A dental abscess is always attached to the apex of a root of a tooth and not to the alveolar process; and therefore is more properly called a dental abscess than an alveolar abscess. To abort a dental abscess it is only necessary to detach it from the apex of the tooth by destroying its bag of pus. This can be done either by excision by a broach through the canal or cutting it off by a drill hole through the process. It can also be destroyed by an injection of sulfuric acid through its fistulous opening, or through the canal of the tooth, or by first enlarging the canal and apical opening, and then injecting the acid. To insure against after trouble the canal and the apical opening should be filled with cement. Some prefer filling the foramen with a point of gutta-percha dipt in eucalyptol oil, and the canal with gutta-percha made into a thick solution by 1 part formalin and 9 parts chloroform. The tooth cavity may be partly filled with oxiphosphate and finished with metal.

I was visiting a dentist a time ago when a well-dressed, intelligent looking young lady entered the office, saying:—

“Mrs. Judge Oliver recommended me to come to you to have some dental work done.”

“Take off your wraps, if you please and take the chair,” said he. “Yes, I see there is some work to be done. I will take a chart of it. What may I call your name?”

“Mary Burgoin.”

“Ah, O, yes. Mary, I believe you are working for Mrs. Oliver.”

“Yes; I am her seamstress.”

“Ah, yes—I am sorry; but Miss Burgoin, excuse me. I do not work for servants.”

And he left her to leave the chair and put on her wraps and leave without any attendance.

I call that shabby, shameful, mean, ungentlemanly, unfoundedly contemptible.

NOTES.

Silica on gold assists its melting.

* * *

Keep gutta-percha covered with water.

* * *

A solution of carbolic acid is good for tempering steel.

* * *

Liberia is said to be the richest gold country in the world.

* * *

Caustic potash is one of the best applications for warts.

* * *

Keep creosote in the sunlight, in well glass-stopped bottles.

* * *

Add a little oil of cinnamon to your listerin and other mouth washes.

* * *

A twenty-five per cent solution of iodid of pottassium removes blood stains.

*

Equal parts of glycerin and lactic acid will remove moth patches and freckles.

* * *

Never mind what the other fellow has or has not done. See that you do your best.

* * *

"Sticky wax" is made with about two parts rosin and one part beeswax. It is very useful in mounting teeth, etc.

* * *

A little gum arabic added to your flux keeps your solder in place and helps to control its flow.

* * *

The effect of an anesthetic is hastened and less strength necessary if the fluid is inserted quite warm.

* * *

Oxiphosphate is made denser and harder by the addition of very finely powdered porcelain.

* * *

In nearly all exposed pulps, and sometimes when they are entirely exposed, a paste of iodoform and creosote carefully laid on over the exposure is a good covering to precede oxiphosphate. A little of the powder of the cement mixed with equal parts of oil of cloves and creosote is also good.

The total amount expended for pensions during the year ended July 30th last was \$141,200,551, which is an increase of \$1,747,761 over the previous year. Since 1865 the payments for United States pensions have aggregated \$2,148,156,095.

* * *

To rid plants of lice wash with a solution of hard soap, about an ounce to a pint of hot water and a half-pint of paraffin oil. This must be shaken in a bottle violently till there is a complete mixture. Now add a quart and a-half more water.

* * *

There are few dental societies named after one of its members. The Heyden Dental Society is one; and now the venerable namesake is mourning his death. He was an honored man and a *professional* practitioner.

* * *

Dr. F. C. Ayers, of Geneva, N. Y., would like light on using gutta-percha for plates in place of rubber. Forty years ago I used it, employing the common sheets found in depots, and it worked nicely. I thought it was tougher than rubber.

* * *

There are very many of freshly exposed pulps which may be saved by covering with a paste of iodoform and glycerin. Place this on a small piece of asbestos paper and cover the exposure, paste downward. Now nearly fill the cavity with cement and finish with metal.

* * *

The time has been when "soft and cohesive" were correct appellations to distinguish our gold foils, because the cohesive was always hard and "tinny," rattling when shaken. But now the latter is as soft as the former. Cohesive and non-cohesive are therefore the better terms.

* * *

"O, I can never go to that man again. He has the gravity and coldness of a hangman." So said a lady to whom I had recommended a really skilled dentist. It is a pity some men do not know how to receive their patients, and entertain them affably after they are received.

* * *

To painlessly cure a corn first keep it wet through the night, and then, after picking off all the soft part, apply a cotton dressing saturated with vaseline, covering this with a patch of rubber adhesive plaster. Repeat this daily, each time removing what can be easily detached. The corn or wart will gradually disappear.

Dr. Hatch, in the *Cosmos*, gives his experience in prescribing bone forming foods to pregnant women. The finale was difficult forceps delivery in both instances, with the death of one of the infants. The development of the bony structure at birth was what should have been seen only at the age of six months. Good teeth are a good thing, but a solicitation that these shall be strong is less important than the child's or the mother's life.

* * *

The nuisance of tobacco slobber and smoke is expected in the nasty quarters of the abandoned refuge of humanity in our worst cities, but it ought to be a surprise, and is a shame and a disgrace to see it in our dental colleges! How can we expect gentlemanly deportment, refined manners, chase language, or even clear intellect where there is such filth? And how can we look for a clean profession to come from such low morals and lax discipline in its student?

* * *

There have been few franker, sturdier, progressive dentists in the dental field for a generation than Dr. Frank Abbott, of New York. He was the making of the New York Dental College, and he was never satisfied if it was not continually improving. He had a fine practice. He was really loved by his patients. His death is an irreparable loss both to his friends and the profession.

* * *

Bicarbonate of soda (common baking soda) is one of our best antiseptic dressings, in whitlow and other phlegmonous swellings. It neutralizes the acid fermenting condition, stops purulent secretions, reduces the inflammation and produces a healthy flow of pus, cleansing the parts and causing resolution.

It is quite as good as an application to burns and scalds.

A two or three per cent solution is often quite sufficient, though with burns and scalds a saturated solution is used, or even the powder.

* * *

Having taken quite an interest in the question-box of WELCH'S MONTHLY AND BRIEF, I have picked up courage to ask a question myself.

What are the physiological effects of equal parts of creosote and carbolic acid on the alveolis? Will it produce necrosis?

Yours truly,

Dr. J. B. DeWees, Carrollton, O., Carroll Co.

Parke Davis & Co. make convenient pellets of cocain in cotton as an obtundent of sensitive dentin.

* * *

Copal dissolved in ether is good to line sensitive cavities, to cover cement fillings and to drop on cotton as a covering in treating or killing exposed pulps.

* * *

Dr. Brown, of Red Bank, N. J., boils his hypodermic needles in soda water when they become clogged. This clenses the tube and restores their brightness.

* * *

The undergraduates of the University of Pennsylvania, Dental Department, publish a creditable journal of 32 pages. It is a monthly during eight months of the year, at \$1.00.

* * *

Dr. L. G. Ingersol, of Keokuk, Ia., was one of the brightest lights in the dental profession. His disease leaves a vacuum that will require a very smart young man to fill.

* * *

The production of gold last year was the greatest known for many years—\$240,000,000 worth. The United States mined \$53,000,000 worth.

* * *

The Dental News is a new monthly of sixteen pages, published by D. E. Wiber, D.D.S., Washington, D. C., at 50 cents. Its first numbers give promise of sterling value.

* * *

Prof. W. P. Mason, of Troy, estimates that the loss to Philadelphia by typhoid fever amounts in value to an annual tax of \$1,392,000. This loss, he claims, could be easily prevented.

* * *

Aside from chewing gum being an offense to good taste, it is a habit of distortion. The continual use of one set of muscles produces an enlargement or swelling which destroys the harmony of the features. And it is certainly injurious.

* * *

Our illuminants "shine brighter and brighter even unto the perfect day." A German has invented a burner throwing gas on a metallic hood with such force that a common gas jet will give one hundred candle light. And the light, though so great, is not dazzling, but a golden yellow light, agreeable to the eye, and displaying objects in their natural color.

FOR OUR PATIENTS.

HEALTH AND IRRITABILITY.

One of the most troublesome features of life, under unhygienic conditions, is the irritable condition into which the denizen of busy cities is apt to drift. The dyspeptic troubles, consequent on the ingestion of unsuitable food taken at unsuitable hours; the substitution of worry for exercise and of "pick-me-ups" for healthy stimuli—all tend to impair the equilibrium of his physical organization, till incomplete assimilation and imperfect nutrition culminate in a jaded condition of body and mind, which betrays itself by a want of self-control, and consequent "pettishness" and ill-humor. The philosopher has said, "He who is himself ill at ease can scarcely be expected to contribute to the ease of others;" but, fortunately, the individual so affected exerts something more than a negative influence on the happiness of the persons with whom the details of every-day life bring him into contact. His servants learn to dread his "spleen," and the charm of domestic life is destroyed by his querulous discontent. Such a state, which is rarely the attribute of perfectly healthy bodies and well-balanced minds, should be looked on as an indication of undue friction in the mechanism, calling for the intervention of the physician.

A careful inquiry will often elicit the fact that the hyperesthetic temper is of adventitious and possibly recent origin, and is attributable to excesses, either gastronomic, interlectual, or sensual. With this information in his possession the medical attendant will not find it a difficult task to formulate such rules as shall conduce to a return to the normal. That the patient will always consent to purchase serenity of mind at the price of self-control and abnegation is too much to expect, as patients are at present; but, in case of refusal, he will only have himself to think if he ultimately becomes possessed of serious doubts as to whether life be really worth living. The professional man himself will do well to make undue irritability on his own part the pretext for more careful distribution of work and play, or even for a holiday. It constitutes as sure and as reliable a sign of exhaustion as do the failing appetite and the unrefreshing sleep; and for his own sake, as well as for that of the people who are

the involuntary victims of his infirmity, he should consider by what means he can regain the health which he has jeopardized. Town people are notoriously wanting in that calmness of temper to which rural happiness—such as it is—is largely due; nor can this ever be attained so long as the exigencies of fashion involve habits as opposed to health as they are to happiness.

British Medical Journal.

HOW TO EAT WISELY.

As a universal rule in health, and, with very rare exceptions, in disease, that is best to be eaten which the appetite craves or the taste relishes. Persons rarely err in the quality of the food eaten; Nature's instincts are the wisest regulators in this respect. The great sources of mischief from eating are three—quantity, frequency, rapidity; and from these come the horrible dyspepsias which make of human life a burden, a torture, a living death.

RAPIDITY.

By eating fast, the stomach, is full and overflowing before we know it. But the most important reason is, the food is swallowed before time has been allowed to divide it in sufficiently small pieces with the teeth; for, like ice in a tumbler of water, the smaller the bits are the sooner are they dissolved. It has been seen with the naked eye that if solid food is cut up in pieces small as half a pea it digests almost as soon, without being chewed at all, as if it had been well masticated. The best plan, therefore, is for all persons to thus comminute their food, for even if well chewed the comminution is no injury, while it is of very great importance in hurry, forgetfulness, or bad teeth. Cheerful conversation prevents rapid eating.

FREQUENCY.

It requires about five hours for a common meal to dissolve and pass out of the stomach, during which time this organ is incessantly at work, when it must have repose as any other muscle or set of muscles after such a length of effort. Hence persons should not eat within less than a five hours' interval. The heart itself is at rest more than one-third of its time. The brain perishes without repose. Never force food on the stomach. All are tired when night comes; every muscle of the body is weary and looks to the bed; but just as we lie down to rest every other part of the body, if we, by a hearty meal, give the stomach

five hours' work, which, in its weak state, requires a much longer time to perform than at an earlier hour of the day, it is like imposing on a servant a full day's labor just at the close of a hard day's work—hence the unwisdom of eating heartily late in the day or evening; and no wonder it has cost many a man his life. Always breakfast before work or exercise. No laborers or active persons should eat later than sun-down, and then it should not be more than half the midday meal. Persons of sedentary habits, or who are at all ailing, should take nothing for supper beyond a single piece of cold stale bread and butter, or a ship-biscuit, with a single cup of warm drink. Such a supper will always give better sleep and prepare for a heartier breakfast, with the advantage of having the exercise of the whole day to grind it up and extract its nutriment. Never eat without an inclination.

QUANTITY.

It is variety which tempts to excess. Few will err as to quantity who will eat very slowly. Take no more than a quarter of a pint of warm drink with a piece of cold, stale bread and butter, one kind of meat and one vegetable, or one kind of fruit. This is the only safe rule of general application, and allows all to eat as much as they want. Cold water at meals instantly arrests digestion, and so will much warm drink—hence a single tea-cup of drink, hot or cold, is sufficient for any meal. For half an hour after eating sit erect, or walk in the open air. Avoid severe study or deep emotion soon after eating. Do not sit down to a meal under great grief or surprise, or mental excitement.

Family Doctor.

[From early childhood till thirty-five years of age I was a terrible dyspeptic. One of my prominent cures was a similar diet to that laid down in this article.—ED. BRIEF.]

STEPHEN ALLEN'S POCKET PIECE.

Many years ago the fine steamer Henry Clay, which ran between New York and Albany, when on her down trip, and just opposite the beautiful village of Yonkers, was found to be on fire. The steamer was immediately headed for the shore, but notwithstanding its nearness to the land and the heroic efforts made to rescue the passengers, many lives were lost. Among the victims was Stephen Allen, Esq., an aged man of

the purest character, formerly a Mayor of New York, beloved and esteemed by all who knew him. In his pocketbook was found a private slip, of which the following is a copy. If our young men, and old ones too, would practice these precepts, the virtue, patriotism, and prosperity of the nation would be vastly improved:

"Keep good company, or none.

"Never be idle. If your hands cannot be usefully employed, cultivate your mind.

"Always speak the truth.

"Make few promises. Live up to your engagements.

"Keep your own secrets, if you have any.

"When you speak to a person look him in the face.

"Good company and good conversation are the very sinews of virtue.

"Good character is above all things else.

"Your character cannot be essentially injured except by your own acts.

"If one speaks evil of you, live so that none will believe him.

"Drink no kind of intoxicating liquors.

"Ever live (misfortune excepted) within your income.

"When you retire think over what you have done during the day.

"Make no haste to be rich, if you would prosper.

"Small and steady gains give competency with tranquillity of mind.

"Never play at any game of chance.

"Avoid temptation, through fear you may not withstand it.

"Earn money before you spend it.

"Never run into debt, unless you see a way to get out again.

"Never borrow, if you can possibly avoid it.

"Do not marry until you are able to support a wife.

"Never speak evil of anyone.

"Be just before you are generous.

"Keep yourself innocent, if you would be happy.

"Save when you are young, to spend when you are old.

"Read over the above maxims at least once a week."

DENTAL BRIEF.

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ORIGINAL COMMUNICATIONS.

THE STRUGGLES OF ONE WHO WON.

Dr. T. B. Welch.

"But, father, I aspire to something more than a cobbler. We must have cobblers, and cobbling is honorable; but I believe I have something in view that, if I thoroughly prepare myself for it, will please me much better, and will be much more profitable and congenial. Mary and Alfred are now old enough to take care of the younger children, and I am confident I can work myself through college, and then earn enough, more than I can on this bench, to compensate you for the two years I shall be earning nothing."

Thus spoke John Mason when nineteen years of age. There were ten children of them, and all had to live on what the father could earn by cobbling and by cultivating, with the help of the children, an acre of garden and truck. At times, the children, as they became old enough, earned a little by helping the neighbors; but all told, there was a scant supply for so many mouths to feed and so many backs to clothe. But in spite of their poverty, and the necessity of the older ones doing something, the cobbler persisted that all of school age should attend the three months' district school. The three elder children were therefore good scholars, as rated in the district, and many thought all beyond this was superfluous.

In view of these family expenses, and of the children earning nothing while at school, cobbler Mason thought it impossible for John to have his way.

"Well, John," said Mary, "you know I am to teach school next summer, in Bath, and father says I may have all I earn during my first term; now, if father will let you go to a dental college, I will give you half I earn."

"Yes, added Alfred, "and you know Mr. Fox says I may put in an acre of corn and potatoes on his land this spring and

have half I raise. I'll take your place on the bench with father, and find time somehow to do this work at odd hours, and I will give you half the profits; and I'll do my best to coax pa to let you work out this summer, and have what you earn.

"Yes, and it will be just fine," chimed in ten-year old Willie, "for all of us children to run over to Mr. Fox's patch and help Alfred like everything, when we don't work in the garden."

So, in spite of Mr. Mason's misgivings, he gave his consent.

Mrs. Mason had done more to help John to become a dentist than the father had imagined; for she had seen from many hints John had thrown out, and from his success in learning from their village dentist, that he was both anxious and clever in his efforts. Then, too, John had paved his own way by economizing in every way he could. He had saved what he had earned at odd times, and his father had encouraged the boy at cobbling by allowing him a quarter of all he earned on the bench. This he had given his mother to keep for him. When he could possibly spare the time he had also, as we have hinted, slipped over to dentist Graham, to learn all he could of what he hoped would be his future life's work. The doctor was glad enough to teach him, for the boy was so earnest to learn, that he was of much help in the laboratory. He even taught him how to fill teeth for neighboring children with amalgam, and with cement; and at one time allowed him to make a set of teeth for a poor woman. He took the impression, and with the doctor's oversight, did all the other work. He had also taken home dental books to study, which had given him quite a preparation for a college course.

At the time of the father's consent there were yet three months before the fall term, and he persuaded his father to let him earn what he could, that he might have enough for the expenses of the first year.

* * * * *

The busy city of Philadelphia was reached. The great University of Pennsylvania was found. As he entered the vast enclosure he looked around bewildered at the many great buildings, and at the dignified men as they past in and out of the various departments. After much inquiry, he found the proper official. But perfect dismay seized him when told the total cost of the course. He had been misinformed. All it had been possible to raise was three hundred dollars, and nearly fifty of this had been spent for new clothes, etc. This to him was a vast sum. But matriculation, professors' tickets, books, instruments and other immediate expenses would take it all.

"Dr. Welch," said a stranger to me one morning in the early fall of 1883, as he came into my dental depot, "I am in a sorry plight. I have come under great difficulties 200 miles to attend the coming term of the Dental Department of the University of Pennsylvania. I was told that \$250 would be ample for the first term, but I was entirely forgetful of the expense of board. So here I am stranded at the very door of this grand opportunity."

"Oh, no," said I; "not so bad as that. I am glad to see the pluck that has brought you here; and now, if you will show the same perseverance in pushing your way through, you will come out a better dentist, and a better and healthier man, than if you had a thousand dollars to spend, as many a student spends before returning home. I know this from experience."

"I will do anything; but I see nothing that is possible."

"Oh, well, it does us good to run up against a stone wall now and then. The faint hearted turn back, and that leaves more room for the courageous on the other side of the wall."

"Yes, if the courageous get over the impassable wall. I have come to just such a stone wall; I would climb over it, or work through it, or dig under it, if I only knew how. But I see no possible way of doing either."

"Where there is a will there is generally a way. I would give nothing for a boy that could not do impossible things."

"Well, you have said many things like that in your magazine; and now I have come to you for the test. Shall I say I *will* attend this school, though I see its impossibility?"

"Yes; and then be determined to find the means to do the impossible. That is the pluck of the young man with the right kind of metal in him. 'I will' accomplishes almost anything. Because, if this strong will is intelligent and persistent, he finds that all things come to him who seeks with his whole life."

"You mean an 'I will' and rich relations who are willing to back up his will."

"Oh, go away with your rich relations! They are all well enough when you can't do better. But let us see how we can break down this stone wall you have run against. How much will your board cost?"

At the least five dollars a week, including washing and incidentals."

"Cut this in half and you will have less dyspepsia and more vigor and hours for work. Hire a room for a dollar a week, and live on one dollar and fifty cents. I lived on less than this

for more than a year when I was attending college. Now the question is, how will you get even this amount. Can you not borrow it?"

"No; I have no one I could borrow a dollar from."

"Good. And you cannot go in debt for it?"

"No; I have no credit."

"Good. Then you will have to earn it?"

"Yes; if it is possible."

"And it will do you good to be obliged to. And it will make a man of you to know you are doing it. And be one of the brightest spots in your life as you remember it. And why not include a little more? You say you have no one to look to for help; but by and by you will need more than you need now. There is extra for your diploma, and a lot of money for your outfit, and for at least six months living on faith in a lonely office. You ought to be laying aside at least two dollars a week for your whole two years at college. And you can do it."

"My gracious!" Do show me how it can be done. Come; I am impatient."

"Villa, bring me an ounce of my alloy. There, young man; that will see you through, and give you money to spare. You will be the fourth who has gone through college on that alloy."

"But I can't fill teeth."

"Sell it to those who can. You have no sessions on Saturdays. Take a dozen of these, and systematically canvass the city. I will give you a dollar an ounce profit."

How easy the problem was solved. The impossible vanished. He paid his college fees, hired his room, and Saturdays visited dentists with alloy and cement. His very simple hearted way, and his native suavity and politeness, gave him entrance to the best offices, and his enthusiasm to learn brought him many a practical lesson from kind dentists.

During young Mason's last term, he was made assistant demonstrator, which, though it brought him little money, brought him many advantages.

He had no time or disposition for rowdyism and dissipation. and no money or brains to throw away on tobacco and beer. He came there to learn all he could, and he was bound to get all he came for. There was no danger of such a student not passing, and no doubt of his future success in the profession.

* * * * *

"Well, well, John. Is this the best you can do? Rather

small, cheap, out of the way quarters for one who was my demonstrator at college! Truly, how has the **mighty** fallen!"

"I am doing pretty well, thank you, Dr. Thompson. You must remember, you left college with a splendid outfit and five hundred dollars; but I with only a scanty outfit, and but two hundred dollars to begin with. I peddled alloy and cement for three months after I left college to earn a presentable suit of clothes, and lease and furnish these rooms—this for my office and the other for my laboratory, bed room, kitchen, etc. Even this chair is not paid for; but the doctor who showed me how to pay my board at college, has faith that I will pay for the chair not long hence. I am really encouraged. I have made seven dollars this week, last week six, and sometimes I make eight or ten, then, of course, some weeks I make nothing."

"And how much for the last six months you have been here?"

"Well, not much above my expenses, to be sure; but a little, and that little I am hugging very closely. But I believe I have pleased my patrons, and that gradually I shall do better financially. And how have you got along, Dr. Thompson?"

"Oh—I have done nothing yet. You know it is only nine months since we left college, and I am not willing to commence in this small way. I am going to buy out some thriving practice, and then swim."

"Well, perhaps that is the best way for one with plenty of money. But really I have so much to learn, I should be afraid to assume such a practice. Then, too, I have an ambition to build up a practice of my own. If my own merits make a thriving practice, I can hope it will be lasting. I should hardly expect to do such a business here, but as soon as I can earn the money I shall be glad to improve my location and my surroundings." * *

It is Prof. John Mason now. Leaving the small town in the vicinity of Philadelphia, he went West eight years ago, and has gradually worked up a lucrative and popular city practice. He was recently invited to a professorship in a dental college near his beautiful home. He refused it, till assured it should not embarrass his private practice.

And what of his friend Thompson? Is he still looking for another's thriving practice? He has bought out two, but in his hands they did not either prove permanent. With a wife and two children he has gone back to his father; and he is somewhat of the opinion that dentistry does not pay.

FRIENDSHIP.

We go to church Sunday after Sunday, and listen often with pleasure and sometimes with profit to an old, old story.

My subject is certainly familiar to you all—the word “Friendship.” A word which is very much abused, an expression which is distorted and twisted until it becomes meaningless, and then again we find it used for all that it is intended to imply.

It is a beautiful word when we express it and act it in its true meaning. Friendship is a difficult thing to gage. As one vessel is larger and will hold more than another, just so are we constituted. Often do we find a man ever ready to go out of his way to benefit another. We call him a man with a large heart—and we call him truly. He will sacrifice something, either his time or his means, and will do it cheerfully. This is friendship in its true meaning. While again we will find another who will go his own way, and if he can do something for you as he walks this straight road, all right; he will do it. But do not expect him to turn to the right or the left to accommodate you, as he has enough to do when he takes care of himself. He will do a little for you in the name of friendship, but is it?

There can be no true friendship without sacrifice.

How many of us are cordial and friendly with those with whom we meet and associate till some little thing creeps in which raises the passions and call for the hot and bitter word, which may mar the making of a strong affection. Then our friendship is forgotten.

Why will a lot of animals—dogs, for instance, bask in the warm sun together, and yet all jump like mad on the stranger dog? Though friendly together, if the cook throws out a bone they will fight the fight of their lives for it, and the one who is so fortunate as to get it will run off by himself to enjoy it, and will snarl and snap at the others if they should dare to try to get even a smell of it. Are they very much different to mankind? I wonder if we receive our inspirations from them, or do they take it from us?

Love and friendship are surely twin sisters, for if we have the spirit of friendship within us we have also the spirit of love.

The spirit of conciliation (not the art) is also a spirit of friendship. If the hot word or the sharp retort is rising within us and we repress it, and in place we take the milder way, what is that? Is it not a sign of the true spirit of friendship?

We have a beautiful illustration of love, and friendship, and conciliation in the parable of the "prodigal son."

The father took back the prodigal, and to the good son, who came to him hot and angry, he conciliated with kind words.

Why will a mother think so much about a wayward child? Why will she sit up late of nights to let him in? Why will she sacrifice so much to screen him? Is it not her deep affection, her true friendship for him which causes her to cling to him?

In Dickens' "Tale of Two Cities" he portrays a man who stands ready to sacrifice his worthless life to save the life of a friend, who has something to live for. You who have read this book will remember when the knitting woman counted "twenty-three."

Alexander Wilson, Jr.

METAL CLASPS FOR RUBBER PLATES.

The best time to make clasps is when you have the case in the articulator and previous to setting up the teeth.

Regarding fit, it is not necessary to fit closely to the buccal surface, as this surface is very often imperfect in the model, especially from plaster impressions, where removal from the mouth has to be considered sometimes to the extent of not permitting any plaster, or very little, to extend over the buccal surface.

It is better to fit carefully the distal or mesial surface of the tooth which ever side you intend using for your clasp, and also not to extend the gold over the palatal or lingual surface, as the rubber will make the best fit there and has the additional advantage of being easily filed afterward to aid adjustment. Bend the metal to approximate loosely the buccal surface of the tooth. Do not trim the point till inserting the finished plate in the mouth. Then it can be cut the desired length and rounded, and the clasp adjusted to perfection.

A tongue or lip of metal must be soldered to the clasp for the rubber to hold. The position of the piece must, of course, vary in different cases, and judgment is necessary to find the best position so that it will not interfere with the arrangement of the teeth or weaken the plate, or be so placed as to be exposed in finishing the rubber. The danger of weakening is most likely to occur in lower cases, in which the lip or tongue of metal can generally be run backward under the shoulders of the teeth, close to the pins; and in uppers any position, always selecting the

thickest portion of the plate. Be careful also to keep it well down toward the model. This lip can be soldered to the clasp in a very short time by punching two holes through it and at each end with a plate punch. Into one of these holes insert the point of one side of a pair of tweezers tight enough to hold it, then place your clasp against the end in whatever position you desire; then squeeze the tweezers, holding with the thumb and finger just as you would to hold any single piece. The lip and clasp can be held together easily and soldered in a Bunsen flame. The hole in the other end of the tongue gives additional retention for the rubber. This tongue or lip may also be made wider at one end, the narrow end being soldered to the clasp, giving, as it were, a dovetailed piece in the rubber. It is seldom necessary to make this piece longer than one-quarter of an inch. The end which is to be soldered to the clasp may also be cut at an angle instead of square off, which will throw the piece in or out to suit the case. Some dentists use a straight piece of metal, punching a few holes in one end for the rubber and bending the other around the tooth, and call it a clasp. I have never seen one of these so-called clasps doing good work. The point of retention being at one end and the strain at the other, thus necessitating a thick piece, which will not give the flexibility so necessary to a successful clasp. It must also be made narrow to permit of lining being covered by the rubber, which is in most cases a serious objection.

Oliver Martin, Jr., Ottawa, Canada.

GOLD IN AMALGAM.

W. W. Coon, D.D.S., Alfred, N. Y.

Six or eight years ago, while in an amalgam conversation with Dr. S. B. Palmer, at one of our meetings, he told me to save the excess mix of amalgam to work over and make new. When a little quantity was accumulated, to put it in a sand crucible, and drive off the mercury by heating in the coal stove, if that was the most convenient. Line the crucible with borax, sprinkle borax over the amalgam, and, imbedding the crucible in the coals, await the elimination of mercury. Then pour into ingot form, file, pass a magnet through the filings to catch the little pieces of steel from the file, bottle, temper by boiling thirty minutes, and have for use an alloy that in every respect is better than the original. All this I did, and was so pleased with the product that my scrap amalgam has been the means of giving me the best

alloy I have as yet obtained. I did not repeat the process many times before commencing to put my scrap gold in the fused alloy. Finding this to improve it, not in the most expected way—viz., in the matter of color—but by making it tough and constant in form, I kept adding gold in increasing amount till the resulting alloy was 15 per cent gold.

Let me repeat: This 15 per cent. gold alloy is not so much better in color as it is in toughness and constancy of form, and it is these qualities that, above all others, are to be desired in an amalgam. The color would probably be perfected by the addition of a small percentage of zinc, but I believe it would lessen its toughness, and, as I have no use for a front tooth amalgam, I have not added the zinc.

Cosmos.

RECENT PATENTS RELATING TO DENTISTRY.

John A. Saul, Patent Agent.

596,022, Dentometer, David L. Aber, Pittsburg, Pa.

596,450, Tooth-brush, Fred S. Allen, Valparaiso, Nebr.

596,399, Speculum, George R. Fox, Plaquemine, La.

596,254, Dental disk-holder, George W. Watson, Passaic, N. J.

596,667, Dental chair, Nicholas M. Rose, assignor of one-half to P. N. Hudspeth, Bowie, Tex.

597,235, Wetter and wiper for dental grindstones, Oscar B. Brann, Washington, D. C.

597,099, Artificial tooth, Houston M. Carroll, assignor of one-half to J. P. Oldham, San Antonio, Tex.

597,278, Barbers' chair, Charles W. Fischer and A. J. Rollert, assignors, by mesne assignments, to Theodore A. Kochs Company, Chicago, Ill.

597,359, Fountain spittoon, George E. Johnson, assignor to Peerless Fountain Cuspidor Company, Fort Wayne, Ind.

TRADE-MARKS.

31,003, Dental plugs or other fillings for teeth, either temporary or permanent, Edward F. Andrews, Detroit, Mich.

31,073, Fancy and perfumed soaps, perfumery, mouth washes, tooth washes, tooth pastes and powders, toilet powders, hair pomades and other oils and greases for toilet use, Lever Bros., Limited, Port Sunlight, England.

GROWING.

C. R. Taylor, D.D.S., Streator, Ill.

From His Annual Address, Illinois Society.

A growing desire for greater intellectual achievements and for higher attainments in our profession is the supreme test of desire. Reason is the power behind the throne of wisdom, and the greatest and best aim of life. Our gatherings should be to seek for knowledge and to reason together, with the hope of finding wisdom which will lead us into the scientific nature of things so that, individually, we may be of the greatest helpfulness to suffering humanity in the daily application of our professional life.

Self-preservation is said to be the first great law of nature, but a greater law stands forth and says, "No preservation without progress." So the greatest law of the universe is the law of progression.

Unseen hands are constantly changing star dust into revolving planets; having within them the potentialities of all the myriad forms of life. The earth on which we live has been evolved from the nebulous mass which contained within it all the possibilities of life which have since found expression on this globe.

The first cells of organized life had in them all the potentialities of life that lie between the monad and man. That divine influence which has wrought life from the lowest living matter up to man, is still working, and whether in the future there is to be developed on this earth a superior order of life form than man only ages can tell. There is no question that humanity as a whole, the world over, is being moved to a higher intellectual and moral height than the history of man has ever shown. Things are being done to-day under laws more wonderful than was ever done when the gods and men walked, talked and worked together in myths and miracles.

As Shakespeare says:

"There is a divinity that shapes our ends
Rough hew them as we may,"

is scientifically true. Man's development has been accomplished by advancing and retreating, now up, now down, "spiral" rather than direct. Often without any thought of his own intellectual possibilities and future, and in spite of his ignorance, the invisible hands of destiny have pushed him forward and upward, till

the prophecy is now going forth that man in the future will be a six-sense being.

The highest and holiest duty of man is to know himself; not simply the mystery of his physical form and mental characteristics, but of his higher, ethical and spiritual nature.

All organized life is dependent on at least two conditions. First, that it can reproduce itself, and, second, that progressing it can adapt itself to the changing and improving conditions and environments of its life. That is a universal law embracing life and society.

AN ATTRACTIVE OFFICE, AND PRESENCE OF MIND.

Dr. Luella Cool, San Francisco.

As I am a woman, I know the good influence of an attractive office better than a man does. Women like pretty things,—a tidy, well appointed dental office with a few ornaments is an attraction to her, be she even an old maid,—anything that will detract “from the horrors of the situation.”

My patients, on entering my office, exclaim, “Oh, how pretty!” And as they see pictures on the wall, plants, birds, fancy work, etc., they remark, “Why, it looks like the room of an artist;” the chair of dread is behind a pretty screen, the instruments all concealed in the drawers of a desk, and there is nothing to indicate dentistry or pain.

The Spanish custom of receiving people has taught me much. Business is not immediately broached; they are invited to enter and a conversation is opened on everything else but dentistry. By the time this is spoken of fear has disappeared, and my patients are completely taken up with my cheerful, pretty rooms, or the greeting of my intelligent parrot, who says. “Hello!” “Poor Polly!” then begins to cry or changes her talk to Spanish.

I then examine my patients’ teeth and have completely gained their confidence. I talk low, and soothe their fears, and soon have them free from nervous fears. In going quietly to work my confidence is instilled into my patient.

That is one trait I have learned to control. I never lose my presence of mind, and consequently my patient feels it also. Even though a danger threatens I do not allow my patient to be aware of it.

I will never forget the circumstances of an assistant once in

my office losing his head while administering chloroform. The patient was extended on a reclining chair. I asked my assistant to bring from another room a wash bowl for the patient to expectorate in. On his return, in his excitement, he gave a jump, and, landing on the other side of the patient, and running to a corner, put the bowl on the floor.

It looked so funny I burst out laughing, and the physician and other assistant looked at me in wonder till I pointed to the wash bowl away off in the other corner, and the would-be dentist standing with his mouth open frightened out of his wits. He was afraid the patient had hemorrhage. Of course there was considerable blood, for I had extracted eight teeth. Presence of mind in the time of danger should be cultivated by all, as it is essential for the peace of the patient and the success of the operator.

MAGNIFYING OUR CALLING.

C. R. Taylor, in Illinois Society.

Let us be inspired with the duty of magnifying our calling. Let us show to the world that our profession is the most progressive, scientific and exact of all the healing professions. And that we are the peers of all the learned professions in culture and accomplishments. Lecky in his "History of European Morals" pays our profession this high compliment: "It is probable that the American inventor of the first anesthetic has done more for the real happiness of mankind than all the moral philosophers from Socrates to Mill." That is praise indeed, for that "inventor" is one of our professional immortals.

Let us have the greatest aspiration and ambition, not simply for glory and renown, but to serve our day and generation in all worthy ways, by being faithful and true in our professional services and attainments, however humble our talents, for he is great who is always true.

Let us believe with Emerson that

"So nigh is grandeur to our dust,
So near is God to man,
When duty whispers low, thou must,
The youth replies I can!"

CURRENT THOUGHTS.

NECESSITY FOR REST.

Dr. McLane Hamilton: Nervousness is the great brain trouble in this country. It is caused chiefly by the continued strain of business. Englishmen take too little time to think about their health, and to think especially about their brain. All the time they are thinking of business; how to get on in the world, and how to make a fortune. Many of them would work twenty-three hours out of the twenty-four if they possibly could, and would then complain that they hadn't time to attend to their business properly. This continued strain on the brain is also the cause of so much insomnia that is prevalent. Another cause of nervousness is that many keep their brains working in too narrow a channel. They don't seem to develop it enough. They keep working along in the same groove all the time. Of course, I am speaking of the majority. The man of business, the merchant or the broker studies chiefly the market in which most of their transactions occur, and let other subjects go by. Children's minds are not developed properly. They want to have a wide range of study, and they want to have that study made as easy as possible for them. Their brains are not as strong as those of an adult. They must be trained carefully, and their studies should be made just as light as possible.

Dr. O. Paine, a specialist of the brain: Men very often die from overwork, especially brain-workers. Many men study day and night and work day and night almost, and so overtax their brains that they become mentally and physically incapable of performing their proper work, and eventually break down altogether under the mental strain. These then have to rest, and great care has to be taken that they may fully regain their health. Many have broken down so completely that as long as they live they are mere wrecks of their former selves, and many fail to recover at all. A great many are troubled with sleeplessness, and fail to pay any attention to this, thinking that it is nothing. This is really a very serious and dangerous condition to be in. Persons who can't sleep can't rest properly. Eventually the brain will wear out. It is impossible to keep well without sleep. Men must have sleep or suffer for it, and the first organ of the body that will suffer will be the brain. Unless the brain is prop-

erly rested the patient will break down and, perhaps, become insane.

Dr. Lewis A. Sayre says: If men, and women, too, would study to take more rest, would make it a practice to take rest at certain periods during the day, and would put everything one side in order to have that rest, we doctors would have much less work to do than we have now. With everybody almost the chief thought seems to be excitement. Men have excitement in their business, and when their business is over they will seek an excitable recreation. Many women live on nothing but excitement, and after they have indulged in it freely for a certain period, regulated according to the strength of their constitution and according to their nervous temperament, they break down, and then have to take an enforced rest. When they get in this condition it is very hard for them to recover.

Rest can be taken in a variety of ways. The only perfect rest is sleep. A man should take rest after he has eaten his meals; particularly after eating his dinner, which is supposed to be the heaviest meal of the day. Some people only rest properly when lying down. Some rest most, when removed entirely from their business cares, when taking outdoor exercise. Others seek rest in various kinds of amusement. To some fishing is said to be a great rest; they manage to put away all thoughts of business, and center the whole of their attention in watching the float, and many become so interested in it that they will sit in one position for hours thinking of nothing but the nibbling of the fish.

Family Doctor.

CATAPHORESIS.

Dr. Clyde Payne.

Electricity has been harnessed by the ingenuity of man to give us light, draw our cars, stimulate our worn-out bodies, and last—but one that interests us most—to cause the diffusion of drugs through the teeth for the relief of pain, namely, cataphoresis. I will not attempt to give a history of it; much has been written on the subject. I will first endeavor to give you the accepted theory of its action in as few words as possible. The current is from the positive to the negative pole. If the negative electrode is applied to the wrist or cheek and the positive to the cavity in which has been placed your medicament, the electric current facilitates the osmosis of your obtundent into the tooth. It does that and nothing more.

It seems to be more effective in children than in the adult; at least the desired effect can be obtained in less time, because the tissue is less dense. It is advisable to excavate any part of the disorganized tissue that can be done without pain before using the cataphoric current, and thus save the time it would take for the obtundent to penetrate the barrier over the sensitive part that it is your object to anesthetize.

That splendid results can be obtained by cataphoresis is no longer questioned. It is an established fact that the teeth can be excavated and filled without pain, the more sensitive the case, the nearer to an exposure of the pulp, the more pronounced the result, and in the least time. There are innumerable apparatuses on the market, nearly all of which are good. All you want to have is a galvanic current, and be able to apply it gradually and continuously without breaking the current. A battery outfit is the best; one attached to the street current is irregular, and the polarity is liable to be changed, and you will get no result and not know the cause. A great many of the apparatuses on the market you can get a result from, but pain is not given in applying the current. My experience being limited—only sufficient to convince me of the value of cataphoresis, I will quote from the originators and recognized authorities. Dr. N. W. Gillet devised a rheostat which enables the electric current to be subdivided into such minute fractions that the increase from the smallest to the highest is accomplished without any sensation of pain to the patient. Dr. M. L. Rhein says the use of cataphoresis will prove no exception to the general rule that anesthesia is followed by hyperesthesia, which subsides within thirty-six hours. You can use your cataphoric current for bleaching, sterilizing root-canals, extracting or in any case where you wish to cause a diffusion of a medicament for whatever purpose you desire.

Gazet.

A sensational story has been started by a New York daily to the effect that Henry M. Stanley is gradually turning black—becoming a negro in fact! That his skin is already a mulatto-colored, and taking a deeper hue daily. It is added that “this remarkable occurrence is attributable to the transfusing of African (negro) blood into his veins on several occasions, while in the wilds, for the purpose of immunizing him against the dense miasm so prevalent in the low lands of the Dark Continent.

Medical Times.

TEACHING DENTISTRY.

Prof. J. Taft.

The method of teaching in our dental colleges is undergoing a change, as in other institutions. Improved methods of instruction are being introduced, from the kindergarten to the universities. Is there any reason why the dental colleges should not make similar changes, with a view to their betterment, to making them more efficient? Those among us who can look back forty or fifty years will recognize that our methods were very primitive—elementary—then. Others can hardly conceive of the change that has been wrought. A special point is that the person seeking to enter our profession shall be thoroughly prepared to do so. This rule has not been enforced in our profession as it should have been. Unfortunately the demand has been for the largest number in the classes, regardless of fitness or preliminary training. It has now come to be recognized that to make available any line of special education the general education must be as thorough as possible. In some portions of our country a large percentage of the young men are well educated. Grammar schools and high schools are easily accessible. But in other parts of the country opportunities for a good education are more limited; the young men are denied many privileges and opportunities common in other communities. But there is a general awakening; opportunities are increasing; the people are waking up to the realization of the necessity of preliminary education as essential to success. In the dental profession, as much as in law or medicine, it is admitted that progress is in proportion to preparation. In dentistry it is not only finger-craft—manipulative ability—that is needed, but there must be an inculcation of principles, or the best results will not be brought out. The lecture method should not be abandoned altogether. The study of text-books is good in its place, but too much of it is objectionable, as the mind gets into grooves, follows in the line some one else has worked out; there is no incentive to original thought. Text-books are valuable as works of reference, to corroborate or refute; but to limit the student to the task of committing the contents of so many pages, on which he will be examined by questions, is not education in the true sense of the word. To educate is to draw out, to stimulate thought, not to make the student do just as somebody else has done. Laboratory work is necessary, but it must not be allowed to overshadow didactic methods. Each has its place, and the two should be wisely combined. It

is a mistake to discredit the lecture system. The voice and the personality of the lecturer contribute elements not to be found in books. Books have no magnetism; they rouse no enthusiasm; they stamp no living impress on the mind, on the character of the student. A teacher, as such, should have distinct qualifications; he should have had special training for the position. Unfortunately there has been no such requirement for the teachers in our dental colleges. There should be normal schools for training teachers of dentistry and medicine specially for that work. Then we would have men far above those of us who began in such a simple way in years long gone by. *Cosmos.*

COMBINATION FILLINGS OF GOLD AND CEMENT.

S. B. Palmer, Syracuse, N. Y.

Success with me lies in the preparation of the gold used. Out of the many preparations on the market, some of which may be equally as well adapted to other conditions, none other could take the place and meet the demand for Watts' crystal gold, No. 1—"old form." To meet other requirements, this gold is now put up in "strips, cubes, sliced," and the old form, a single cake sliced; crystal gold being cut from a cake. For the filling under consideration, it is far better to cut from the cake as needed. A slice of any thickness can be cut from the end of a cake with a razor or any blade equally sharp, without condensing in the least. And in like manner the slices can be cut in squares, oblongs, etc., as best adapted to the cavity.

Leaving the gold for the present, we will consider three forms of cavities, and no more in this connection.

First, very shallow, buccal or labial. I find some barely through the enamel, so that on the oral teeth the bottom of the cavity is convex, like the original form of the enamel; such cavities need not be deeper than a visiting card. Let the margins be at right angle or slightly undercut, no matter what form the bottom of cavity is after decay is removed.

As the same principles are involved in filling the other cavities to be mentioned, let us finish filling the first.

The cement should be such as is best for crown setting. The mix should be somewhat thinner, and be carried to the cavity on the point of the spatula or a thin pointed instrument. The gold slice for the first layer should be about the thickness of a dime, and cut to more than cover the cavity, and be annealed on mica or metal, at a low red heat.

The instruments used have much to do with the success of this work. They should be light shanked, oval faced, and finely serrated. It is not necessary to procure a new set, as some good ones can be made by grinding to size the flat oval ends of plug finishing files, those of slender shanks, using lateral pressure; for direct pressure, ordinary instruments answer. I find that hand pressure is most reliable throughout.

Having prepared the cavity and protected it against moisture, coat the surface with cement; remove surplus with the point of a stick or otherwise; cover the orifice with the gold and gently press it down in the center, working toward the margin, so as to force out the cement; wait two or three minutes and remove the upturned overlapping gold, which has served the purpose of preventing the cement from contact with the gold lining. Clean the enamel border from gold and cement, and apply another layer of gold, which may be as thick as a small penny; condense as before. On reaching the enamel, turn the overlap in, and condense to fill the depression at enamel border; possibly an addition of gold may be needed. The foundation is ready for filling with foil, or finish with the same.

If foil is used, let it be in flat folds of not more than four layers of foil. Fillings of this kind show no dark line around the border, and do not drop out.

Cavity No. 2. Located in any position where it seems desirable to use cement for a part of the filling, or to use the gold as a facing and protection to cement. This combination embodies two opposing principles, which greatly annoy operators of little experience. First, gold to adhere to cement must come in contact while the cement is sticky; second, cement is not a firm foundation for gold, unless there is adhesion.

Instructions are given to introduce the cement, and before it hardens pack the gold and wait for hardening. I have been unable to get a good gold foundation; some of the cement usually covers or becomes mixed with the gold, so that there is not as much cohesive surface between the gold foundation and the filling proper. Fill the cavity with cement, as would be done for an entire plug; remove surplus and shape the surface of cement to meet requirements. By this time the filling will have hardened so as not to flow under pressure. Make the second mix as described for No. 1 and conduct the operation as already described. Any gold may be used to finish.

No. 3 represents a cavity that has been filled with cement, which from wear or for a more permanent filling gold is desired.

Prepare the cavity by leaving such portions of the cement as may be covered with gold. Experience teaches that cement does not adhere closely to an old filling, also that there is not much adhesion between gold and hardened cement. To harmonize this difficulty cover the foundation with a thin mix, on which anchor the gold, as already described, and complete the plug with foil. It is surprising how thin cement penetrates the crystal gold, also how firm the gold is cemented to the dentin. Seeing is most convincing. Take a piece of ivory or bone, file a surface flat, paint it with cement and press on it a layer of gold, and see what a beautiful surface the gold has and how firmly it adheres to the bone. By this means we can see just how thin the layer of gold is. Take a slice as thick as a dime and press one-half, leaving the other, and it will be found that the packed gold will not be much thicker than paper.

Ohio Journal.

AMALGAM AND CEMENT AS A COMBINATION FILLING.

F. W. Knowlton, D.D.S., Akron, O.

The cavity is prepared in the usual manner, not depending wholly on the cement for holding the filling in place when there is any strain on the filling during mastication. If the cavity comes in close proximity with the pulp, a thin piece of asbestos paper cut the proper size and one side covered with an antiseptic varnish should be placed over the pulp, the varnish holding the paper in position and assisting to protect the pulp from any deleterious influence the cement might have on it. Place the powder and liquid on the glass slab and roll a small pellet of cotton very tight so there will be no loose shreds of cotton remaining. Mix the amalgam as usual and wafer a portion of it. Now mix the cement a trifle thinner than for a cement filling, and place a small portion in the cavity with the spatula, and, taking the previously prepared pellet of cotton in the pliers, spread the cement against the walls of the cavity with a single pressure; if done quickly it will cover the cavity nicely and not stick to the cotton. Now place some of the amalgam in the cavity and with ball burnisher work the amalgam into the cement, at the same time working the surplus cement to the margins of the cavity, when it must be thoroughly removed with excavators so there will not be a particle of cement left exposed when the filling is completed. Fill the remainder of the cavity with the wafered amalgam, and finish as if it were an ordinary amalgam filling.

Ohio Journal.

IMPLANTATION AND ASSOCIATED OPERATIONS.

Russell H. Cool, D.D.S.

My failures have all occurred where the membrane has been destroyed. Therefore, in selecting teeth for this operation I carefully examine each one with a powerful glass to determine whether or not the pericementum is intact. On the other hand, I have been successful with teeth in which small patches of the membrane were missing; but in such cases I have carefully decalcified the surface at those spots. Whatever may be the scientific reasons for the success of plantation of teeth, certain it is that the result is satisfactory in most operations that are skilfully performed, and with proper regard to the selection of teeth and avoidance of surgical infection. In this paper I shall deal with the practical and surgical features of plantation rather than the histological theories in regard to it.

All extracted teeth are infected; if not by specific infection, then by the mere manipulation incident to their extraction. Therefore, the first principle of plantation, as well as of all surgery, should be and is asepsis. Without proper aseptic precautions no operation may reasonably be expected to be successful. Formerly great reliance was placed on carbolic acid and bichlorid of mercury, but objections have been urged against the use of bichlorid of mercury in preparing teeth for plantation, because any solution of bichlorid sufficiently strong to be a useful germicide is destructive to the vitality of the tissues. Carbolic acid and its allied preparations, though excellent in their way, are objectionable because coagulant. Trikresol, one-fourth or one-half of one per cent, is preferable to carbolic acid, it being pure and five times as efficient. For a long time I used a saturated solution of boric acid. More recently I have been using Cabot's sulpho-naphthol, two minims to the fluid ounce. This preparation I used for disinfecting my instruments, sterilizing the oral cavity and for securing thorough asepsis of the tooth itself.

PREPARATION OF THE TOOTH.—In preparing the tooth there should be a complete removal of all of the contents of the pulp-canal. Being a firm believer in the thorough sterilization of the dentin of the tooth, I advocate the use of a disinfecting agent which by its chemical action will destroy the mephitic compounds that occupy the tubuli. I have found nothing better for this purpose than the oil of cassia. Having thus treated the canals, I then proceed to fill them; and I know of nothing more suitable for that purpose than gutta-percha. All deposits should be thor-

oughly removed from the external surface of the tooth, and the tooth should be left in the antiseptic solution for several hours prior to performing the operation.

ANESTHETIC.—Local anesthesia is to the stomatologist what general anesthesia is to surgery. The latter is the lethean stream into which the whole sentient personality is dipt, and in which the quivering nerve forgets to bear its message of suffering to the brain. The former is the fairy wand that with airy wafture banished the grim oger of pain and makes the scalpel's skilful sweep a caress and a benison, rather than a terror and an agony. Thanks are particularly due to the investigations and experience of members of the Stomatological Club for the fact that the various operations of oral surgery have become absolutely painless to the patient. In the different operations of plantation I use, to commence with, about thirty-three and one-third per cent solution of cocain (Dr. Younger's formula), employing a portion of a minim at a time. I seldom find it necessary to use more than from half to one and one-half minims of this solution. I then continue the operation with Dr. Clyde Payne's solution of one and one-half per cent of cocain. In this way I invariably secure a result that is satisfactory to the operator and devoid of danger to the patient.

THE INCISION AND PREPARATION OF ALVEOLUS.—No fixed rule can be formulated for the incision to be made in preparing for the insertion of the tooth. Much depends on the local conditions, and the surgeon must look to the artistic appearance as well as to the surgical success. To secure this there is no teacher like experience. An old soldier once said: "War is the only true school of generalsy;" so operating is the only true academy of surgery. In the insertion of incisors and cuspids the operation known as the "flap operation" should be practiced. The line of incision being established, the gum should be dissected from the alveolar process, care being taken not to cut out the gum more than is absolutely necessary to secure space for the tooth. With trephines and properly shaped burs with movable gauges, the length of the tooth and the depth of the alveolus required may be ascertained. These trephines and burs are made in different sizes, so that the operator with a little practice can shape the alveolus in accordance with the contour of the tooth. A particular point to be observed is the thorough removal of all debris, using for this purpose one of the antiseptic solutions heretofore mentioned, and also employing pyrozone, or some other peroxid preparation, because of the peculiar cleansing properties appertaining to such oxigenic preparations.

In preparing for the implantation of upper bicuspid and molars care should be taken not to penetrate the antrum; and often, on account of the extreme thinness of the alveolar process, it is better, when implanting for bridge-work, to turn the lateral surfaces of the root to the buccal and lingual aspects. Finally, to avoid all possibility of surgical infection, the mouth, and even the throat, of the patient should be sterilized by the use of pyrozone spray or something equally efficacious. The hands and instruments of the operator should, of course, be kept constantly moistened with the antiseptic. Next, the alveolus should be properly dried and the tooth carefully and firmly inserted in the place prepared for it. The theory has been advanced that the tooth should be driven into the socket. This is not necessary, and such procedure is likely to produce irritation and cause a failure of the operation.

I have studied and experimented with splints, plates, pins, anchorages and the various other devices employed for retaining the tooth in position before attachment of the tissues is accomplished. These are all subject to the objections that they are uncleanly, cumbersome, uncomfortable to the patient, and that they interfere with articulation and mastication. Such devices are prolific sources of the failure of operations. I use silk ligatures, employing Corticelli or Carlson & Currier silk threads Nos. 000, 00, 0 and A. By the correct use of such thread the tooth may be so ligated as to be held firm in its place, while the ligatures occupy so small a space that they will not act as irritants. Properly applied these ligatures will last from one to eight weeks.

ADAPTATION.—A most wonderful phenomenon in connection with implantation is found in the fact that the implanted tooth assumes the color of the adjoining teeth, so that it is impossible to distinguish the implanted tooth from those that are "to the manon born. That it is a blessing to many patients cannot be denied. One patient, who had lost an implanted tooth after five years of usefulness, had worn a plate for one year and then came for a second operation of implantation, remarked that he would rather have an implanted tooth, even if the operation were necessary every two years, than to be subject to the thralldom of the plate. He but voiced the sentiment of others.

The idea that any operation to be good must be absolutely permanent is untenable.

Pacific Gazet.

THE ERECT POSTURE.

The power of assuming the erect attitude, the specialization of the upper limbs into instruments of prehension, and of the lower limbs into columns of support and progression, are not in themselves sufficient to give that distinction to the human body which we know that it possesses. They must have co-ordinated with them the controlling and directing mechanism placed in the head, known as the brain and organs of sense.

The head, situated at the summit of the spine, holds a commanding position. Owing to the joints for articulation with the atlas vertebra being placed on the under surface of the skull and not at the back of the head, and to the great reduction in the size of the jaws, as compared with apes and quadrupeds generally, the head is balanced at the top of the spine. The ligaments supporting it and connected with it are comparatively feeble, and do not require for their attachment strong bony ridges on the skull or massive projecting processes in the spine, such as one finds in apes and many other mammals. The head, with the atlas vertebra, can be rotated about the axis vertebra by appropriate muscles. The face looks to the front, the axis of vision is horizontal and the eyes sweep the horizon with little effort.

The cranial cavity, with its contained brain, is of greater volume in man than in any other vertebrate, except in the elephant and in the large whales, in which the huge mass of the body demands the great sensory-motor centers in the brain to be of large size. Relatively, also, to the mass and weight of the body, the brain in man may be said to be in general heavier than the brains of the lower vertebrates, though it has been stated that some small birds and mammals are exceptions to this rule.

We have abundant evidence of the weight of the brain in Europeans, in whom several thousand brains have been tested. In the men the average brain-weight is from 49 to 50 ozs. In the women, from 44 to 45 ozs. The difference in weight is, doubtless, in part correlated with differences in the mass, weight, and stature of the body in the two sexes, although it seems questionable if the entire difference is capable of this explanation. It is interesting to note that even in new-born children the boys have bigger heads and heavier brains than the girls. Dr. Boyd gives the average for the girl infants as 10 ozs. and for boys 11.67 ozs. A distinction in the brain-weight of the two sexes is obviously established, therefore, before the child is born, and is not to be accounted for by the training and educational advantages enjoyed by the male sex being superior to those of the female sex.

The brains of a number of men of ability and intellectual distinction have been weighed and ascertained to be from 55 to 60 ozs. In a few exceptional cases, as in the brains of Cuvier and Dr. Amercrombie, the weight has been more than 60 ozs., but it should also be stated that brains weighing 60 ozs. and upward have occasionally been obtained from persons who have shown no signs of intellectual eminence.

On the other hand, it has been pointed out by M. Broca and Dr. Thurman that if the brain falls below a certain weight it cannot properly discharge its functions. They place this minimum weight for civilized people at 37 ozs. for the men, and 32 ozs. for the women. These weights are, I think, too high for savage men, more especially in the dwarf races. We may, however, safely assume that if the brain-weight in adults does not reach 30 ozs. it is associated with idiocy or imbecility. There would seem, therefore, to be a minimum brain-weight, which is necessary that the mental functions may be actively discharged.

We have, unfortunately, not much evidence of the weight of the brain in the uncultivated and savage races. The weighings made by Tiedemann, Virchow, Reid and Peacock give the mean of the brain in the negro as between 44 and 45 ozs., a weight which corresponds with that of European women, while in the negress the mean weight is less than in the female sex in Europeans. In two Bush girls from South Africa—of the dwarf race—the brain is said to have been 34 and 38 ozs., respectively.

From the weighings which have been published of the brains of the orang and chimpanzee, it would seem that the brain-weight in these apes ranges from 11 to 15 ozs., and the brain-weight appears to be much about the same in the gorilla. These figures are greatly below those of the human brain, even in so degraded a people as the dwarf Bush race of South Africa. They closely approximate to the weight of newly-born male infants, in whom, as has just been stated, the average weight was 11.67 ozs. For the purpose of ape life, the low brain-weight is sufficient to enable the animal to perform every function of which it is capable. Its muscular and nervous systems are so accurately co-ordinated that it can move freely from tree to tree, and swing itself to and fro; it can seize and retain objects with great precision, and can search for and procure its food. In all these respects it presents a striking contrast to the infant, having an almost similar brain-weight, which lies helpless on its mother's knee.

Sir Wm. Turner, in British Science.

OPENING THE BITE WITHOUT DESTROYING THE PULPS.

M. F. Finley, D.D.S.

I wish to present to your attention a case which has been of considerable interest to me, in that I do not know of a similarly treated case, nor have I found in my limited consultations with brother practitioners any one who knows of a similar one, therefore I presume to ask your consideration of my statement of conditions and plan of procedure.

The patient—male—aged sixty-two years, every tooth present in upper jaw and all in regular position, with exception of left cuspid, which closed inside its opponent of the lower jaw; the four incisors were very much worn, so that the palatine surfaces presented a straight line or inclined plane from labio-incisive edge to palato-gingival line. These incisors, when jaws were closed, came in contact with and pressed on the lower gums. The bicuspid and molars of the left side showed some effect of mechanical abrasion, the outer cusps lapping pretty well over the outer or buccal side of the lower teeth opposit. The bicuspid and molars of the right side showing scarcely any wear.

On the lower jaw the first and second molars, right side, were lost, accounting for the last-mentioned condition in the upper jaw, at the same time throwing the work of mastication almost entirely on the left side of the mouth, and in consequence causing the wear spoken of on the teeth of that side on the upper jaw, the lower teeth suffering more loss of tissue than the upper, and they also being driven down into their sockets from extra pressure.

The lower incisors were worn to an inclined plane, presenting a surface opposit that of the upper incisors, the plane running from the palato-incisive edge to the labio-gingival line, and the incisive edges impinging on the upper gums when teeth were closed.

My belief is that much of the responsibility for the excessive wear of the teeth and the deprest condition of the lower teeth, left side, is caused by the malposition of the left upper cuspid—one of the main abutments of the arch being so misplaced as to offer no resistance to the settling together of the two jaws—whereas if the cuspid had been in its normal position, or had been forced there by regulating at the proper age, it would have been quite impossible for such a condition to have attained.

The contact of the front teeth with the gums opposit in closing the mouth, and the close proximity of the outer cusps of

the upper molars of left side with the gums of the lower jaw, forcing the food in the process of mastication in painful contact with the gums, caused the patient so much discomfort that he sought advice as to what might be done to the best advantage.

After taking impressions and getting models, my first thought was to open the bite with cap-fillings. How to attach these cap-fillings was the question to be solved.

My reason for not crowning these teeth, as was advised by some, was that too much tooth structure would have been sacrificed on the proximal surfaces. The teeth were not decayed or broken, but were worn down and all the teeth had living pulps, and I was afraid to disturb the relation of the gums to the necks of the teeth as much as would have been required to have placed crowns over three adjoining teeth, with no teeth missing to afford easy access to any of the surfaces to be cut away.

Now for my plan of procedure.

The second bicuspid and first and second molars on left side, lower jaw, were restored or built up with these cap-fillings, and the second bicuspid and third molar, right side, lower, were crowned to carry a bridge to replace the lost first and second molars, the occlusion raised to correspond with the opened bite.

In preparation for these cap-fillings the occlusal surfaces of the teeth to be capped were ground so as to make them nearly a plane; then taking an impression in moldine and making die and counter with Melotte's metal, I struck up pieces of nearly pure gold about thirty-two gauge to fit these ground surfaces, and, drilling four holes in the molars and three in the bicuspid, punched holes in the little pieces of gold to correspond in position, and soldered platinum pins in them and then united to them cusps struck up on a die-plate and filled, thus making a cap of considerable thickness.

I ought also to say that the first piece of gold stamped to fit the tooth was thickened by a second piece stamped over the first and united to the first before the pins were soldered in. Twenty karat solder was used in fastening the pins and filling the cusps, and the two pieces united with eighteen karat solder.

As to the location of the pinholes in the molars, I drilled them at a safe distance from the margins of the occlusal surface of the tooth in the centers of the four sides, by this means avoiding the cusps and thereby also the cornue of the pulp, for, as before stated, all the teeth had living pulps.

As a result of my labors the second bicuspid and first and second molars of the left side, lower jaw, were raised with cap-

fillings, the proximal surfaces of the teeth not being disturbed in their relations one with the other, and the second bicuspid and third molar of the right side made to carry an all-gold bridge, thus raising the bite and restoring the lost masticating surface, preventing contact of the front teeth with the gums and opening the bite sufficiently to prevent pain during mastication. The cap-fillings were fastened with cement, as was also the bridge, and all set at the same time so as to avoid irritation by pressure falling on a single tooth or on one side of jaw.

As an incident in connection with the construction of the bridge, when working on the third molar the patient related his experience in having had a gold filling put in on the buccal surface of this tooth by one of our late esteemed friends in New York city, which required a little more than an hour in the preparation of the cavity and insertion of the filling, and for which he paid two hundred and fifty dollars. Since that occasion he said he had often wondered for what purpose he had preserved this third molar, as it was really not of much use to him, the two teeth in front of it having been lost; but now he realized why it had been preserved to advantage, because it enabled him to have this bridge put in, using the tooth as one of the abutments.

Dental News.

REST IN THE OPEN AIR.—Dr. Oakman S. Paine is a great believer in rest, and thinks that next to sleep the most beneficial kind of rest may be taken in the open air. How rest should be taken depends entirely on the person who is wanting the rest. If a busy man can sit still for a few minutes at odd intervals during the day, and put away all thoughts of business, and just dream for a few minutes, he will find that he would be greatly refreshed by so doing. There can be no stated time to take rest. One should never get so tired as to be compelled to take rest, as if the rest was taken judiciously and at certain intervals, one would never get so tired as to be compelled to go away for rest. Literary men, or men who do a great deal of brain work, require a great deal more rest than manual laborers. Physical workers only get their muscles tired. The muscles are much more easily rested than the brain is. Brain workers should take their rest in the open air. Any change of thought is a rest to a brain worker and after he has been studying hard and exercising his brain to any great extent, a walk or ride in the country will be the greatest possible rest that he could have. *Family Doctor.*

CARE AND NICETY IN HANDLING GOLD FOIL.

Dr. J. H. P. Benson, Washington, D. C.

One of the important features in the manipulation of gold foil is nicety and perfect cleanliness in handling. This not only applies to its preparation and insertion in the cavity, but also to the location in which it may be stored in our cabinet.

Gold foil should not be exposed to any contamination with gases emanating from the medicine case. A drawer or space below, rather than aside or above the medicines, is preferable.

We must also guard against stray particles of mercury coming in contact with foil. This is best done by keeping all amalgam instruments in an entirely separate compartment away from the gold, gold pluggers, polishing stripes, disks, polishing powders, etc.

Should we be so unfortunate as to have mercury come in contact with a filling of gold as we are finishing it, a good way to correct the trouble is to immediately apply a single thickness of non-cohesive gold foil over the surface of the filling, burnishing this thoroughly against the spot where the mercury appears with a hot burnisher. Repeat this several times with a fresh piece of foil and afterward polish, filling in the usual way.

Matches should not, under any circumstances, be kept in the dental cabinet, as the phosphorus and sulphur fumes arising from them may seriously affect the working of our gold foil; and even when we have occasion to strike a match, it would be better to have all foil under cover.

In the preparation and manipulation of gold, we should be careful to avoid touching it with our fingers, or having anything come in contact with it that may interfere with the important properties of softness and cohesion.

To secure the best results in annealing, if it is not already annealed, it is important that the foil should not be placed in the open flame of gas burner or spirit lamp; a tray of mica should be used and the gold placed upon it and held over flame.

In arranging foil into the various forms for filling, it is desirable to avoid overhandling, that the foil may retain that softness and smoothness which are so essential for its easy and proper manipulation. This is an important point and one which we should exert ourselves to retain.

There is quite a neat way of rolling gold foil into ribbons which I have used a number of years, though not original with me, that I think worthy of describing; not so much for the older

members of the profession as for the young men just entering who may not know of it.

The only requisits necessary are a pad for rolling the gold on and a foil spatula.

The pad is easily made. A piece of board half an inch thick and six by eight inches in dimensions is first covered on one side with two thicknesses of velvet, or a single piece of heavy plush, this being covered over with a piece of chamois skin. This gives a nice soft surface which is admirably adapted for the purpose intended.

To fold the ribbons the foil is cut into pieces of the desired size and laid flat on the pad; the foil spatula is then placed with its edge against the foil, and, holding it at about a right angle to it and only pressing lightly, it is deftly drawn toward you, the gold rolling up and following in a neatly-rolled cylinder, which is flattened out into a ribbon by simply passing the flat side of the spatula over it.

A little practice will enable you to roll the foil into any desired width of ribbon. The advantage of this method is its neatness, rapidity and the avoidance of overworking or handling the foil.

Dental News.

SEA-SICKNESS AND A FEW IDEAS TO LESSON ITS HORRORS.
—Few people suffer more than I do when on a sea trip, and my practice in Central America and family in San Francisco necessitated many trips and many dreads beforehand, due to sea-sickness and the prospects of two to three weeks on board a steamer. Each trip I would suffer so much I vowed I never would make the trip again, and that each one should be my last, but home longings would get the best of dread, and I would start out again. I have made 20,000 miles inside of two years. All medicines were of no avail. I finally got the physician to give me some porous plasters, and placed one over the pit of the stomach. On awakening in the morning I would take a tablespoonful of whiskey in three of water. This would act as a stimulant. I went down to every meal, if not too rough, and ate heartily, Worchester sauce being my first course. Many a meal I could not retain, but as soon as I was quiet again I would eat, keeping my stomach full. Sea-sickness is a nervous action of the stomach, and I found with keeping it full, if possible, it would be relieved. The plasters acted wonders.

Dr. Luella Cool, San Francisco.

PREPARATION OF CAVITY MARGINS.

E. B. Weeks, Litchfield, Minn.

The time was, but now we hope is past, when there was no definit instruction given as to the lines on which a cavity margin should be formed or how much or how little the enamel walls should be cut away, with reference to precluding future recurrence of decay.

"Remove decay. Cut away frail walls. Bevel the margins." These were the few but elastic rules for the preparation of all cavities, and as ascertained from the writers in the journals, from speakers at our society meetings, and by observation of fillings coming under our notice, these rules meant very different things to different operators. A cavity cleaned of decay by one operator would not be considered thoroughly excavated by another.

(One would leave enamel walls for the retention of the filling, while another would know that the retention of such frail walls would be the ruin of any filling within a short time.

The first requirement is a knowledge of the minute anatomy of the teeth, and the lines of cleavage of enamel. Then the first rules should be: Cut away all enamel margins not supported by sound dentin. The wish to keep a frail wall of enamel for a retaining wall must give way to the fact that it will not stand, therefore cut it away.

If the line of the margin of the cavity brings you close to the line of demarkation between the lobes of the teeth, cut through to, or beyond such line, for it will prove a source of weakness to your filling if you don't, because of the greater liability of the enamel to split along these lines.

Cut away the margins of the cavity clear beyond the lines of contact on the teeth. Let nothing deter you from doing this, for if the line of union between the filling and enamel is at or within the line of contact, recurrence of decay is almost certain.

Again, carry the cavity margins cut to such a place on the surface of the tooth that the filling may be smoothly polished and beautifully formed. Do not cut into a developmental groove and then stop short at the end of it.

Do not cut next to a groove or to another cavity and stop there, leaving a thin division of enamel between them, but cut it away.

Having formed the cavity margins on the lines indicated, it remains to bevel the enamel margins. The enamel should be shaved or planed down with sharp chisels to that line on which

it splits or cleaves off most readily, then with enamel trimmers the margins of this enamel should be beveled beyond this line, so that the ends of the enamel rods may be protected by the filling. It is impossible in a paper like this to demonstrate just what this bevel should be at each particular part of the tooth or cavity. It must be learned from close observation of the lines on which the enamel cleaves at each different portion of the tooth.

Dr. Ottolengui, in his book on "Methods of Filling Teeth," after rehearsing what has been accomplished in the past, says: "Something more will be required of the dentist of the future. He will be asked to abandon the assertion, 'Madam, your tooth has decayed around my filling, but the filling is all right.'" Undoubtedly there are teeth in which it is impossible to prevent recurrence of decay, but it is equally true that too many times when "the teeth decay around the filling," the filling is not "all right."

Dental Review.

PRACTICAL SUGGESTIONS.

Dr. H. B. Hinman, Bucyrus, O.

SILVER NITRATE.

Where the cavities are not in an exposed position a fifty per cent solution of silver nitrate may be applied to the cervical border of mesial and distal cavities in molars and bicuspid, and will do much toward preventing decay at that point. By means of a few shreds of cotton on a broach it may be applied without staining any other portions of the tooth.

CAVITY LINING.

For lining deep-seated cavities, where it is necessary to leave a portion of partially decayed dentin to avoid exposing the pulp, I combine equal parts of iodoform and zinc oxid and mix with the phosphoric acid. I have never, to my knowledge, had a pulp die under a filling where the cavity was lined in this way.

BROACH HOLDER.

I noticed an article in one of the dental journals recently which advocated the cutting off of the Donaldson broach in the middle, and affixing a ball of soft solder to the end of it to reach the anterior roots of lower molars and the buccal roots of upper ones. I have been doing practically the same thing for some time, but use sealing wax instead of the solder. It is easier to put it on and gives a better grip to the thumb and finger for rotating.

THE USE OF VARNISH WHEN SETTING CROWNS.

Gilbert's antiseptic balsam varnish applied to a Logan crown and pin, and also to the stump of the root and root-canal, before setting, greatly assists in the retention of the crown.

REGULATING BANDS.

To make regulating bands for children's teeth, punch holes in a piece of heavy rubber-dam with the largest hole in the Ainsworth punch and then trim around the hole the desired width.

A USEFUL ADJUNCT IN TAKING THE BITE.

For taking the bite in partial lower plates, a piece of jewelers' soft solder, which comes in small half-round bars, will keep the wax from breaking, and when wax is flowed over this it will be just about the proper thickness for the plate. It is also soft enough so that it can be somewhat bent. *Ohio Journal.*

TO RETAIN ARTIFICIAL DENTURES.

After securing an accurate plaster cast it is coated with rubber cement,—*i. e.*, sheet rubber cut in small pieces and dissolved in chloroform. Then, after removing the tinfoil, slightly warm the adhesive plate and press it closely with thumb and fingers around the cast, allowing the adhesive plate to cover the whole palatal surface as well as the alveolar ridge. It is then trimmed with a hot knife and given a coating of the rubber cement. A sheet of rubber, either red or black, follows this, covering the same surface and being prest closely to the cast, as before, the surplus being trimmed with a hot knife. The cast in this condition is now placed on a piece of paper and covered entirely with plaster; after the plaster has set bind with wire and place in the vulcanizer.

This plate is to be vulcanized forty-five minutes at 320 degrees. An empty flask, or half flask, should be placed in the vulcanizer, on which the plaster investment is allowed to rest, as the water should not reach it.

This will produce the base-plate with the adhesive plate attached and incorporated with the rubber. It will be found to be soft and flexible, and to impart a soothing sensation to the mucous membrane of the mouth. The base-plate is now tried in the mouth and trimmed to accommodate the muscles and used for getting the bite, being waxed up in the usual manner. After obtaining the bite the teeth are placed on the plate with wax and again tried in the mouth. The case is now flaked in the usual

way; however, when the wax is boiled out a coating of rubber cement is applied to the alveolar ridge to insure adhesion of the rubber. The usual method is now followed, the case being vulcanized one hour at 320 degrees. When the case is taken from the vulcanizer the adhesive plate will be covered to some extent with rubber cement; however, this will disappear when worn a short while. The forty-five minutes consumed in vulcanizing the base-plate is more than compensated by the time usually spent in waxing up, finishing, etc.

By the method described a plate is produced of uniform thickness, and one which is much lighter than the usual denture.

Ralfe M. Harlan, in Cosmos.

THE CHIN AS INDICATIVE OF CHARACTER.

Dr. Ernest Crutchen.

Protruding chins characterize men and women of the get-there type. Successful people usually carry their chins thrust forward, with compressed lips. This chin, if heavy, with broad rami and swelling masseters, indicates fighting blood.

A retreating chin shows lack of force, mentally, morally and physically. Usually of the sweet, yielding sort; soon discouraged; desire protection; small executive force. The development of other faculties often makes up for this defect.

A small, well-rounded chin, with a mobil and red cushion of flesh on it, indicates a pleasure-loving owner. If dimpled, all the more so, for dimpled chins belong to coquets. People with dimples love to be petted and loved; like admiration and praise; generally fickle. Usually this chin is healthy, recuperative and long-lived.

Broad chins signify nobleness and large dignity, unless vertically thin, when, if with it there be thin lips of bloodless kind, you find cruelty.

Square chins with little flesh denote firmness and executive ability. These make good haters.

Drunkards usually have a circular line about their chins.

Slovens have wrinkles about their chins.

Long, thin chins are poetic, unstable and delicate in constitution. Such people are subject to bowel derangements. If thin through the angles of the mouth, too, they are prone to tuberculosis. Generally short-lived.

Medium chins with a suggestive bifurcation in the center.

with small mounds of flesh on either side, characterize generosity, impulsiveness, cheery natures. (The same sized chins, with a dab of flesh just under the center of lower lip, indicate meanness, selfishness, brutality.)

N. B.—No one feature can be taken in judging character. Often development of other faculties of mind or feature entirely govern. In each case take the "totality of indications" before judging.

Medical Council.

FRACTURE OF PINS, AND CRACKING OF TEETH IN SOLDERING.

The fracture of platinum pins in teeth and the cracking of teeth in soldering is a difficulty, or rather annoyance, which occurs at some time to all interested in the mechanical aspect of dentistry. The following views, therefore, on the question of some twenty men experts at the bench and of long experience may be of interest:

B.—Will solder 100 out of 100 teeth without accident. He generally bends pins toward root, sometimes rivets and sometimes bends only. Thinks some men are scanty with their backing, which should cover the whole tooth.

G.—Always rivets the teeth, but only lightly, and is very careful to get the heat up very gradually. Countersinks side of rivet. If a flat tooth rides on a stump, the chances are that the tooth will give in a short time.

P.—Has some teeth break, but does not think it is always the fault of the tooth, but considers that more break now than used to. Always rivets teeth, and countersinks side of rivet. There is great danger if teeth are touching on plate; they should never touch. Punches holes on boxwood, which causes depression. Deprest side goes next to tooth. The bur on the other side is filed away, and the hole countersunk.

L.—Always rivets, except where backing goes against vulcanit; pins are then left intact, only they are bent so as to form a hold in the vulcanit. Sometimes teeth crack across pin.

P. G.—Punches holes, and does not rivet, only slightly bends the pins together, and does not countersink. Has met with fractures of pins, and thinks them due to peculiarity of bite.

J.—Never has any teeth come off; does not rivet before soldering. Solders on plaster and sand mixt.

W. J.—Bends pins after punching holes, and lightly taps down with riveting hammer; then runs file over pins. He fits

his tooth after backing is on, not before. Invests in plaster and sand. Carefully heats up. Rarely has accidents; might have three in a year among some thousands used.

S.—Used to rivet teeth, but owing to fractures and accidents has discontinued. Prepares backing, countersinks holes both sides, and then without cutting off pins “nicks” them the way he bends them close to the backing, so that they come to lie at perfect right angles over the backing. Uses many teeth, and seldom has an accident.

J. P.—Does not find one tooth in a thousand break, nor the pins. Punches holes in backing, does not countersink, nor rivet, nor cut pins, but simply bends them rootwards to hold backing firm. Greatest danger is in the heating. Makes his cases nearly red hot.

C.—Always cuts his pins short, and then splits them across, and bends them longitudinally. Countersinks slightly on both sides. Thinks accidents happen through overheating, as on cracked or broken teeth solder can be seen on the side of backing touching tooth. Very rarely meets with fractures.

B. W.—Rarely cuts pins of teeth to shorten them, and does not rivet, but bends pins. Says side of backing touching tooth is already slightly countersunk by the pin of the punch, other side he countersinks. Solders as usual on sand and plaster.

Ph.—His accidents are very rare, more frequent in vulcanit than in flat teeth. Countersinks backing on both sides; generally only bends pins. Likes alloy backing in preference to gold. Always solders on asbestos fiber.

W.—Rarely finds tooth breaking. Countersinks both sides; thinks fractures occur if backing does not perfectly fit back of tooth, for bad fit causes leverage. Does not rivet, and solders in sand and plaster. Thinks riveting a danger.

St.—Has very rarely pins break off or cracking; believes it is borax getting between tooth and backing, or overheating, which produces accidents. Always slightly rivets, and countersinks on side of rivet. Solders on plenty of sand and some plaster.

J.—Uses many thousands of teeth annually and does not have a tooth cracked or pins smashed once in three months. Thinks that he would use 99 out of every 100 teeth without any such mishap. Never rivets pins, nor cuts them short, only bends them over and then files them down a little. Makes case red-hot, after investing it in the usual way. Heats very gradually. Thinks fractures occur through overheating. Riveting tightly will be sure to make both go during soldering.

X.—Always countersinks holes both sides, and rivets before soldering. Has no accidents; if there are such, considers them due to tight riveting.

W.—Rarely has breakages of pins or cracking of teeth. When holes are punched in backing he only slightly countersinks side nearest to tooth; the side of rivet he well countersinks, and then rivets lightly, as hard riveting causes a great strain and weakness. Cases when invested should be heated very gradually, and cooled very slowly. Non-attention to these points will bring about certain mishap. Thinks, as a rule, would fix 99 out of 100 teeth without failure. Has in hand case of lady who persists in having teeth fixed in and out; these same teeth have gone through the fire three or four times without the least accident.

H. M.—Does not have any teeth breaking off; if a breakage occurs it is due to the bite, but accidents will arise if the backing is not brought close to the tooth. Sometimes there is a bur at the holes, or a little porcelain bump is sticking up on the back of the tooth. Only bends pins; but if bite goes on pins he rivets. Backing should be brought right up to cutting edge. Remove wax with boiling water, and of course heat gradually.

Gr.—Punches holes in backing, then countersinks on side where pins are bent. Then cuts pins, so that when each is bent toward the other they touch transversely. Cuts little groove in backing with sculptor, files inside of each pin, and then they bend easily. Heats gradually; never has fractures of pins, or cracking of teeth.

C. H.—Has had pins come off in flat and vulcanit teeth. Does not countersink on rivet side. Teeth sometimes give way months and years after making. He simply cuts pins off, and bends them together. Always solders on plaster alone.

H. A.—Rarely or never has breakage. Thinks men are careless in punching holes, and thus strain on pins breaks these off. If at any time he finds pins do not readily slip into the holes punched at once uses fresh backing. Thinks some men in bending pins do it close to porcelain, and thus break the pins really before the case is soldered.

Jhn.—Prepares backing by punching holes, which are countersunk on both sides, and bent over, and sometimes slightly riveted. Pins and backing are carefully scraped. Fits tooth sometimes before and sometimes after backing. Accident the rarest thing. Considers failures due to riveting too hard and general carelessness.

Rt.—Takes backing, punches holes, and countersinks on

side where he rivets. Always rivets, and does so on the side which goes on to the tooth; he then runs his sculptor across backing, taking in the two holes also. Sometimes he finds a little ridge of mineral near pins. In that case he bends backing a little to allow for it. Riveting ought to be done on lead, and the lead often changed, as it soon gets condensed. Be careful not to use too much borax, as excess will cause accidents if it gets behind backing. Never has teeth crack or the pins fracture.

E. Duval, Jour. British Association.

THE SELF-MADE MAN.

By what process of reasoning do we justify the custom of calling "self-made" him alone who rises to eminence from poverty? The fact, of course, is that any man is self-made who is made at all. Wealth and social position may supply the opportunity of greatness, but they never made a man great. It is a question whether wealth and distinction are not distinctly unfavorable to any form of greatness with which a man may have the good fortune to be endowed by nature. There is something wholesome and bracing in poverty. No great race has ever been produced in an enervating tropical climate; the manly virtues flourish in rapidly increasing ratio as we journey away from the equator. The youth who is born with a golden spoon in his mouth, and is lapt in luxury from his cradle onward, has not half the chance to make a man of himself. If he turns out a tolerably decent fellow, and does a man's work in the world, he has great reason to congratulate himself; while if he proves to be a man of genius and makes all mankind his debtors, something very like a miracle has been wrought. We do well to honor those who have overcome the obstacles of poverty and deficient early training, but let us honor even more those who have conquered the temptations of wealth and the flatteries of society.

Family Doctor.

SUCTION CHAMBER FOR ABSORBED RIDGE.—Dr. Dienelt, in the *Office and Laboratory*, gives his method as follows:—After your plaster model is nearly dry, mix some plaster very thin, and with a fine camel's-hair pencil, build up a half-round ridge, about the width of an ordinary knitting needle, all along the highest part of your model, or what is left of the original ridge, leaving off about a quarter of an inch from the end of the previously marked off plate, on both sides, or the object will be defeated.

Never wet the model, or your plaster will run where it is not wanted, while, when dry, you can guide your plaster with the pencil and build up a neat and even ridge, a very important point in taking the model from the molding sand afterward. The work should be performed neatly and rapidly, adding a little material at a time, till the ridge is finished to your satisfaction, when finally your plate is struck up, and while trying it in, you will be surprised to find how firmly it will adhere, by means of this narrow and continuous air-chamber. The same process will hold good in rubber plates, but the model should be more thoroughly dried, to prevent the sticky base-plate from injuring the ridge. For troublesome shallow plates, already in the mouth, we would suggest the forming of a hollow ridge by means of an engine bur. He has used this process for many years, and has always found it a success in even the most desperate cases.

ROOT-FILLING MATERIAL.

As a root-filling I use a paste made of equal parts of iodoform and oxid of zinc mixed with oil cinnamon, a preparation that I use almost exclusively for root-filling, and one that seems peculiarly suited for immediate root-filling after the extraction of live pulps. The cinnamon deodorizes the iodoform almost completely, making its use unobjectionable in the mouth of the most esthetic patient. This paste can be used to advantage for filling even the smallest root-canals, as it can be easily introduced on a smooth broach and pumped into the canals. Then by pressing the excess that should be left at the mouth of the canal firmly with a pellet of cotton held in the pliers the excess of the oil cinnamon can be removed, and at the same time the filling in the root firmly packed. This makes a filling that is permanently antiseptic, and, so far as I have been able to judge, possesses all the advantages claimed for any root-filling. It seems entirely non-irritant when placed in contact with the soft tissue, making a satisfactory nerve-capping, and I believe that in cases where only a portion of the live pulp has been removed and the operation has been aseptic, if this dressing be used and placed directly in contact with the remaining portion and the cavity filled, the lesion will heal by first intention, and the vitality be permanently preserved.

N. C. Leonard, in Dental Headlight.

THE NERVES NEVER GROW OLD.

Commenting on the common causes of nervous disorders, Prof. W. H. Thomson says: The message of modern science about the nervous system is more hopeful than ever. It tells us that the nervous system has a greater store of reserve vitality than all the other bodily systems put together. It is the only texture that is found not to have lost weight after death by starvation, as well as after death by any cause. It is the last to grow old; and as to the mind, it need not grow old at all, provided it be steadily applied with that mighty spiritual element in us which we call interest. Even the muscular system can be wonderfully sustained by interest; for should a man attempt the same muscular work on a treadmill which he lightly endures along the mountain brook after a trout he would faint dead away. But the mind will by interest grow steadily, even while bone and sinew are wasting through age.

Prac. Rev.

A METHOD OF CROWNING BROKEN-DOWN TEETH.

By C. J. Hand, D.D.S., Romeo, Mich.

In crowning badly broken-down teeth, or where devitalizing the pulp is not expedient, or is objected to by the patient, as in short laterals or denuded teeth, I have found the following a very good plan: After trimming, so that band can be accurately fitted, make a band of thin platinum to cover all exposed portions of tooth and solder with pure gold. (Of course, it is supposed that the labial wall has been beveled as much as possible to permit the facing being brought in line with the adjoining teeth.) Instead of using a thin facing, secure a Bonwill crown, one that will nicely fit the space, and grind out the lingual portion, leaving the sides intact. Grind till the tooth can be placed over the platinum cap in proper position. It can now be waxed to the cap, invested and body added to restore form; or, better still, a little body mixed thin and placed on the porcelain and platinum cap, gradually raising the heat till fused. This method not only saves time, but prevents the investment absorbing the water in body and causing a porous bake. The crown is much better than a facing, as it prevents the difference in color at sides, which it is almost impossible to prevent when body is added to a facing. If care has been used the crown will go to place accurately and present a very natural appearance.

Ohio Journal.

PRACTICAL HINTS.

A. B. Crawford, Grand Rapids, Wis.

MATRICES.

For matrices I have long used the thin sheet copper from an old electric dynamo brush, and find matrices made from it excellent and cheap.

ROOT FILLING.

Clean canals as well as possible, then fill carefully with anything that will make a tight filling and at the same time be a non-absorbent, antiseptic and non-corrosive. Very thick solution of gum sandarac is good in some cases

RUBBER PLATE FINISHERS.

Perforate corks of different sizes, screw on to brush mandrel of lathe and turn to shape desired.

Cut required grit of sandpaper into half-inch strips, wind around the cork, then wind base end with string and twist ends together and fasten by forcing them into hole in the cork with the mandrel as it is screwed to place. By using this system and a little ingenuity a file is seldom required, and the work is quickly done. After polishing with felt wheels and cones with wet pumice, soap a stiff brush and load it with pumice for the final finish all over.

Ohio Journal.

PAPAIN.

A memoir on the properties and uses of papain is included in a volume just published on "Indigestion," by Dr. G. Herschell. He describes the origin and nature of the ferment, and cites the evidence on which its powerful peptonizing influence was established. As a digestive ferment to be given medicinally, he says papain presents the following advantages over pepsin and pancreatin:

1. It will convert or digest many more times its own weight of meat than they are able to.
2. It can be used when pepsin and pancreatin are contraindicated or powerless.

This latter, as known, is the case when the stomach contents are too concentrated, or insufficiently acid. Under these conditions pepsin is of little or no value, while papain acts energetically. Other advantages of papain are expressed as follows:

3. As regards albuminoids it combines in itself the joint action of pepsin and pancreatin.

4. It can be given combined with acids, alkalies or antiseptics, as indicated by the demands of the case.

5. It has a local action on the stomach that pepsin has not.

6. It is not so repulsive to the mind as pepsin, as it is purely vegetable.

All these properties being taken into consideration, papain is regarded as being indicated in deficiency of the gastric juice, excess of unhealthy mucus in the stomach, irritable condition of that viscus and duodenal dyspepsia.

The effect of papain is thus twofold, local on the stomach itself, or physiologic, removing unhealthy mucus, stimulating the secretion of gastric juice and relieving pain; and chemical, in peptonizing the food and assisting the natural ferments in the work of digestion.

Register.

LONGEVITY.

It is not an uncommon contention that the stories about persons having passed the century mark are "fairy tales," and that really the limit of human life is under 100 years. But statistics show beyond a doubt that the span of life in many cases is more than a century, and that old age among certain races is nearer ninety than seventy. During the ten years from 1881 to 1890, inclusive, there were in Massachusetts 203 deaths of persons past the age of 100. Of these centenarians 165 were between 100 and 105, thirty-five were between 105 and 110, five were between 110 and 115 and one was 118. Of the 203 there were 153 females and 50 males. In Iowa there are now more than 500 persons beyond the age of ninety. There are twenty-one who are more than 100 years old. A statistician named Haller collected a number of instances of extreme longevity in England. He found 1,000 persons who lived from 100 to 110 years, 60 persons who lived from 110 to 120 years, 29 who lived from 120 to 130 years, 15 persons from 130 to 140 years, 6 persons from 144 to 150, and 1 person who lived to the remarkable age of 169. Henry Jenkins was born in Yorkshire in 1501 and died in 1670. It was proved from the registers of the chancery and other courts that he had appeared in evidence 140 years before his death and had had an oath administered to him. In the office of the King's Remembrancer there appears a record of a deposition in which he appears as a witness at 157.

Register.

AN INTERESTING EXPERIMENT.

A German publication gives the following directions for performing a very amusing and interesting experiment: "Take a lighted stearin candle and hold it horizontally over a wide glass filled with water. The drops of melted stearin, when they strike the surface of the cold water, will be formed into hemispherical cups and float on the water. These forms often take the shape of the flower of the common maybell, and can be made smaller or larger at pleasure by dropping the melted stearin from a less or a greater height.

"When a sufficient number of such bells have been made, take a slender iron wire and cut it into sections, of which one end is curved, then warm the straight end of each by holding it in a flame and thrust it through one of the wax bells, so that the wire passes quite through the bell, leaving it hanging at the curved end, where it remains fixed when cool, looking strikingly like the maybell flower when the wire is held curved end upward. In the same way all the hemispherical cups are treated, and finally the single flowers are combined by twisting together the wire stems, when they may be arranged in a vase. By using colored stearin similar colored flowers may be imitated.

Family Doctor.

Dr. Charles W. Purdy, in the *North American Review*, asks:

Are we not becoming more and more addicted to the use of drugs for the relief of ills and pains that are purely the result of faulty habits of living, and most of which would be more surely, more effectively, and permanently relieved by simply correcting our improper habits of life?

Are we not afflicted with a large amount of suffering, misery, and disease for which there is no necessity whatever; and are we not likely through hereditary transmission to entail much of this misery on our offspring?

Do not a very large number of our people die much earlier in life than their constitutions, apparent vigor and family histories would seem to warrant; and are not these premature deaths very largely unnecessary, and, therefore, clearly avoidable?

PRACTICAL POINTS.

By Mrs. J. M. Walker, Bay St. Louis, Mississippi.

ANTIDOTE TO CARBOLIC ACID.—Vinegar is an antidote to carbolic acid. When applied to the injured surface it causes rapid disappearance of the characteristic whiteness, as well as of the anesthesia; it also prevents the formation of a slough.

—Prof. Carleton, *Semarine Medicale*.

SODIUM PEROXID, USED DRY.—Apply rubber-dam and open canals freely. Roughen a fine iridium broach, dip in sodium peroxid powder and carry into canal dry; make three or more applications in each canal. Effervescence indicates the chemical change consequent on bringing the salt in contact with putrefying matter. This is less violent than kalium natrium and quite as effective. When effervescence ceases wash out with a weak solution sulphuric acid, dry and renew the application of the sodium salt.

—H. H. Burchard, *Cosmos*.

AMALGAM FOR CHILDREN'S TEETH.—A very soft amalgam is made of silver 60 and tin 40 parts. This is valuable wherever a very plastic amalgam is desired, as it amalgamates rapidly and sets very quickly, and must, therefore, be used promptly. It will be found valuable for children's teeth and for fissures in any soft teeth. The tin is best turned in delicate shavings in a turning lathe.

—Wm. H. Trueman, in *International*.

A PLACE FOR COPPER AMALGAM.—I have found copper amalgam useful for covering badly pitted, new erupted first molars. It enters into and takes firm hold of the little crevices, so that the surface may be protected till the tooth is matured.

—Wm. H. Trueman, *Cosmos*.

TO PROLONG THE USEFULNESS OF TEMPORARY PLATES TILL ABSORPTION IS COMPLETE.—Place a layer of softened wax on the gum side of the plate; place in the mouth and press to place. Remove and invest in plaster. When hard remove the wax and replace with fusible alloy, having first cut a dovetail groove in the gum side of the plate.

—W. H. Richards, in *Southern Dental Asso.*

[Or, instead of the alloy substitute the wax with rubber and vulcanize.—ED. BRIEF.]

PERSISTENT HEMORRHAGE IN EXTRACTION.—

Apply tannic acid locally and administer as follows:

℞. Gallic acid.....	ʒj
Aqua cinnamon.....	ʒij

Sig: Tablespoonful every hour till hemorrhage ceases.

Rinse the mouth freely with hot water. Gallic acid is easily assimilated, is readily transported by the blood, reaching the bleeding vessels promptly through the route of the circulation; does not induce constipation; increases the coagulating properties in the blood.

—Otto Arnold, Cosmos.

ALUMINOID LINING FOR RUBBER PLATES.—

Disolve rubber in chloroform to the consistency of thick molasses; incorporate with this about twice its bulk of aluminum powder—obtained from dealers in art supplies. Coat the model with liquid collodion. Thin the aluminoid with chloroform till it will flow like paint. Give four coats, allowing five minutes for each coat to dry and ten minutes for the last coat. Pack, close and vulcanize. Finish with brush and pumice. Costs but little, requires but little time, and adds much to the appearance and comfort of the plate.

—G. H. Harker, Review.

PAINLESS PULP REMOVAL—TRICHLORACETIC

ACID.—A patient called at dusk, suffering severely, a central incisor having been splintered well up into the root by a blow from a golf club. A splint of very thin German silver plate was adjusted to hold the pieces in place till the next day, when the pieces of crown were removed and trichloroacetic acid applied to the pulp. The actual crystals were used in order to obtain the most prompt action possible. In an hour the pulp chamber was cleansed to the end of the root, the patient saying the pain was hardly worth mentioning. —Dr. C. F. Allan, International.

ROOT-CANAL DRESSING.—

Force a tapering, hard, dry twist of cotton up the canal and apply the medicament to this; capillary attraction will carry it to the other end. Over the mouth of the canal place a small piece of rubber-dam, cut to size, and over this cotton in the cavity.

—J. T. Danforth, Ohio Journal.

TO MAKE A PERFECT CAST.—MARBLE DUST

AND GLYCERIN.—Four ounces glycerin to a quart of marble dust makes a beautiful cast.

BLEACHING A TOOTH.—Adjust the rubber-dam, open the pulp-canal and remove all debris. With spray of twenty-five per cent pyrozone reach all exposed parts, carrying into canal on cotton if necessary. Avoid crowding it through the apex. After from twenty to forty minutes close up the tooth. Usually after forty-eight hours it will be as white as the others, though it probably will not appear so on the first day. If not satisfactory in appearance, repeat the treatment.

—J. P. Parker, *Items of Interest*.

PULP CAPPING—HYDRO-NAPHTHOL.—I combine one-quarter of hydro-naphthol to three-quarters zinc oxid, mixing it with the phosphoric acid, sometimes incorporating a little oil of cloves or carbolic acid, using it as any oxiphosphate cement for pulp capping and for protecting permanently all exposed sensitive or soft parts in live teeth; and as an antiseptic, non-irritating lining for all classes of fillings. I first bathe the cavity with the twenty-five per cent alcoholic solution of hydro-naphthol, then insert the cement.

—S. S. Stowell, *Cosmos*.

FOR THE OPERATING WINDOW.—For windows facing east, west or south I would suggest curtains made of architects' tracing cloth. It is thin, white, and so diffuses direct sunlight as to produce the effect of reflected light from a bank of white clouds. The expense is trifling and the result very soothing to the eyes of the operator.

—E. G. Betty, *Review*.

A LOW FUSIBLE METAL.—Bismuth 48 parts, cadmium 13 parts, tin 19 parts. Melts below the boiling point of water and is very hard. Can be packed with the fingers. A plaster impression can be poured without waiting for it to dry.

—*Den. Weekly*.

THE USE OF SCREWS.—Dr. H. W. Arthur advocates a more general use of anchor screws for security in contour work and as a foundation for crowning. In vital teeth locate the screw at a point where there is the greatest bulk of tooth substance—as far as possible from the pulp, yet not too near the margin of the tooth.

—*Cosmos*.

MOUTH WASH.—In inflammation after tooth extraction prescribe :

R. Listerin,
Glycerin āā 5j
Aq. rosæ (ad) 5viij

Sig: Rinse the mouth several times a day.

—A. H. Beese, *Ohio Den. Journal*.

GOLD PLATING WITHOUT BATTERY.—The gold plating solution prepared and sold by William J. Pohlman, Woodbrook P. O., Maryland, at a cost of \$2.50 per 2-oz. vial, including instruments and instructions, is very satisfactory for plating regulating appliances and other small articles. It takes effect equally on piano wire, brass, German silver, etc., and is done in a moment. It stands perfectly in the mouth and is appreciated by the patient. A silver solution is also supplied.

—Dr. Gaylord, Cosmos.

M. DE MARION'S METHOD OF TREATING PUTRID ROOT-CANALS.—Clean out all putrid matter. Then introduce formaldehyd on threads of cotton and evaporate with heated silver wire. Repeat two or three times at the same sitting. Then introduce temporary dressing of cotton shreds saturated with formaldehyd and geranium and close cavity air-tight with wax or gutta-percha. Repeat after several days. Where there is perceptible only the mild, agreeable odor of geranium fill permanently.

—F. A. B., Dental Weekly.

SUBSTITUTE FOR ACONIT AND IODIN IN TREATMENT OF INCIPIENT ABSCESS.—Place a drop of tincture of benzoin on the dry gum and cover with a pad of dry cotton, allowing to remain from one to twelve hours—or in a severe case saturate a capsicum plaster with the tincture benzoin and apply to dry gum.

—T. S. Seely, Ohio Journal.

CATAPHORIC DISINFECTION OF CURIOUS DENTIN.—If we put one per cent solution bichlorid of mercury or some other suitable disinfectant into every cavity, after excavating and before filling, then turn on the current for a few minutes, would not this be the most thorough way of disinfecting; and would we not find less discoloration under gold fillings, and would not caries occur less frequently around the fillings?

—H. L. Ambler, Ohio Journal.

CEMENT AND AMALGAM.—Twelve years ago, as a temporary stopping for a large buccal cavity, extending from near the gum margin well up into the grinding surface of a superior first molar, about a tenth part of fine amalgam was dusted in while mixing cement for the filling. It has done, and is still doing, good service.

—T. F. Driskill, Den. Weekly.

ITEMS.

VULCANIZING RUBBER.—Dr. N. R. Macalaster says that in vulcanizing rubber between metal to produce a smooth surface the metal can be more easily removed from the plate and a polished surface left if quicksilver be rubbed on the surface of the metal before packing the rubber. *Dental News.*

The plague in Bombay is rapidly assuming its former proportions. During the last week of September there were sixty deaths from the disease in the city of Bombay, and many more in the presidency. The plague has reappeared in Kurrachee and is spreading to other towns, having already invaded Sholapur.

Ex.

MOLD AND YEAST IN THE AIR.—Dr. S. E. Telliffe, in a recent number of the *Torrey Bulletin*, gives a list of nearly thirty species of molds and yeasts derived from the atmosphere. They were found as contaminations on bacterial plates at the Columbia University College of Physicians and Surgeons during three months. These have all been isolated and pure cultures made from them. They show what a field for study the atmosphere presents. *Science News.*

An Irish brakeman in the railroad yards was hurt by the train, and his friends offered to send for a physician. They asked: "Do you want an allopath or homeopath?" He replied: "It don't matter—all paths lead to the grave." *Ex.*

A PULP NODULE.—A lady came to my office complaining of pain in a left upper third molar, but more severe in the face, extending even to the eye. Her eyes were weak, but the one on left side appeared more inflamed. Patient said she had been annoyed with tooth for about a month, but more pronouncedly within the last week. It was sensitive to cold and heat, having some soreness. I suspected a dying nerve. There was neither discoloration nor appearance of decay that would cause pulp irritation. I encouraged patient to wait a time for further developments, and return to me. She did return in about one hour after leaving the office, saying the pain was so increased she would like the tooth out. I finally consented to extract. On breaking open tooth I found a very pretty pulp nodule, somewhat larger than a kernel of wheat, snugly nestled within the canal near the apex.

Geo. B. Edwards.

Paracelsus says: "He who can cure disease is a physician. Neither emperors nor popes, neither colleges nor high schools can create physicians. They can confer special privileges and thus enable a person who is not a physician to appear as if he were one; but for all that they cannot make of him what he is not. They can give him permission to kill, but they cannot enable him to cure the sick. The best of our physicians are the ones that do the least harm. But, unfortunately, some poison their patients with mercury, and others purge them or bleed them to death. There are some who have learned so much that their learning has driven out all their common sense; and there are others who care a great deal more for their own profit than for the health of their patients. Medical science may be acquired by learning, but medical wisdom is the gift of God."

Practical Druggist.

PAINLESS DENTISTRY.—The great stride made in dentistry, I believe, can be directly traced to the very high standard the colleges of our country have adopted, and that a man to become a dentist must be a man of excellent education before he can enter one of our dental colleges, and must be thoroughly trained in the science that pertain to the teeth, and their careful preservation before he is graduated. It is this standard that produces men capable to grasp with such a problem as has constantly confronted the dentist to this day.

C. Payne, in Gazette.

CRITICISM OF DENTAL EDUCATIONAL METHODS.—Much of the criticism of our dental educational methods is of the destructive sort by those who, while condemning the method and its result, offer no suggestions for their improvement, or, still worse, demand reforms utterly impossible in view of the conditions to be met. What is needed, and what will be gladly welcomed by all honest educators in dentistry, are suggestions which can be practically utilized for the improvement of our system. Criticism of the constructive type always commands respectful consideration and is generally received.

Editorial in Cosmos.

The uncertainty has long since vanished from my mind, as I quite often see in the mouth of some old patient an amalgam filling that attracts attention because it is better than the others I have inserted in the same mouth, and, in looking it up in my records, find that gold is the differentiating factor.

L. S. Goble, in Cosmos.

There is the habit of indifference that impresses our patients unfavorably, a habit that grows to carelessness in not keeping our offices tidy and attractive, and ourselves neat and pleasing. I have seen patients look askance at the soiled napkin covering the head-rest of the operating chair, and before they would place their head on the rest have removed the napkin, when the doctor's back was turned, and thrown it into a corner, while he was oblivious of the bad impression his thoughtlessness had caused.

F. C. Payne, Stom. Gazet.

Take a rubber cup and fill up the small hole with a plug of wood or gutta-percha. Dip in water and place over a fistula opening on gum. The action will be one of suction, and draw out all pus and blood and relieve, also allay congestion. Then paint gum with preparation of iodine, glycerin and aconite.

Dr. Luella Cool, San Francisco.

SHEET WAX.—I have seen so many working hard at the clumsy method of "rolling" wax into sheets that I want you to see if it is not easier to "dip" it. Into the melted wax dip a large smooth bottle (kept filled with cold water) several times till the sheet is thick enough; then pass a knife longitudinally through wax and around the bottom of bottle while reaching over to plunge into cold water. After removing the sheet (which is easily done if it is not chilled too much) care must be taken to clean off any traces remaining on the glass. In the time required to "roll" and trim two sheets I have "dipped" a pound of wax. Great care should be taken in clarifying.

La Salle.

The following is quite a practical hint to our dental students:

"If I were ill most assuredly I would not seek the assistance of a chemist, or of a physiologist, and medicine is not to be learned from the books of Claude Bernard or of Pasteur, or from lectures. Clinical instruction is necessary, such as long observation of patients alone can furnish. Prophylaxis, diagnosis, prognosis, therapeutics are not to be learned in scientific books or schools. Something else is necessary—observation, long, patient observation, the old Hippocratic observation, without which there can be no good physician. Young students must be guided in the examination of patients by experienced practitioners, and no one, I presume, would be guilty of the folly of proposing to replace the clinical ward by the laboratory."

Richet.

EDITORIAL.

YOUNG MAN, MASTER YOUR LIFE PLAN.

To be indifferent or indefinit to your future is unwise. By all means possible, as you approach young manhood, get some idea of what you are best fitted for. Then let your thoughts, and plans, and work, and ambition lead up to it. Character making for life is largely dependent on the foundation you make for it in your teens. If you pass them without in a measure settling your status, your sphere, your life occupation, you will be likely, or at least liable, to drift off into useless, frivolous and perhaps hurtful ways that will make you of little account. There must be serious thoughtfulness, rigid discipline and definit planning, that shall hold you, and guide you, and enthuse you to a noble purpose.

It is not enough that you are industrious. You should not be content even with what brings you a competence. Unless your industry points to your life's work, and is preparing you for it, it does not fulfil its mission. Your ambition must be more than mere money making. Be willing to work hard for but a little income, to struggle and buffet with adverse circumstances, with but little reference to present gain, if it is preparing you for your great future.

Let your ambition be, not so much for high honors, a brilliant career, a wonderful fortune, as for that for which you were evidently made. If your inclination and ambition are toward mechanics, be a mechanic; if toward a farm, be a farmer; even blacksmithing and carpentering and mason work are honorable. But whatever you intend to do, commence as soon as possible to prepare yourself to do well. A good shoemaker is better than a poor politician, or a poor minister, or a poor doctor. In every useful sphere there is room and reward for excellence. If you honor your place, your place is sure to honor you. Elihu Burrett was a blacksmith, but he rose from its ordinary routine to

enlighten the world with his inventions. Henry Wilson was a cobbler, but while on the shoemaker's bench he prepared himself for the Senate of the United States. But both these worthies would have been more to the world, and the world more to them, had they early decided what they would be, and then pushed on definitely, and with a single purpose, to that end.

PLAIN SPEECH.

In writing and speaking do not see how many words you can employ, and how many learned, professional, technical and out-of-the-way terms and phrases you can use. The fewer the better. The plainest, most familiar words convey the clearest expression of your thoughts, and they are preferred by hearers and readers. Some seem to think less of the thought they would present than of its clothing, and they so cover it up with gewgaws and trumpery that we have a poor conception of what they have beneath. It is words, words, words, nothing but words, and misunderstandable words at that. When our institutions of learning get through with so much study of the dead languages, and our professional writers with so much bombastic, farfetched, jaw breaking words and phrases, learning will be easier, and what is learned will be of more practical use; and then our professional books and magazines will contain more wheat and less chaff.

Beautiful thoughts like to dance and sing, and skip and play, in the freedom of simple dress. How they squirm and wriggle and make up faces when bound and fettered and laced in straight jackets. Just give them a fair chance to show themselves, and they wink and blink and caper about delightfully, as children ought to; or look grave and learned and wise, like men of solidity should look; or march with dignity and precision; or work with marvelous skill and exactness if left to their own natural choosing. But if they are put on stilts, or held by faker's wires as puppets on the stage, or drest up in the musty coverings of dead kings and labeled in hieroglyphics—well, they may make

us laugh, or puzzle us, but they do us little service, and even their play is stiff and unnatural.

Words should be but the drapery of our thoughts, and a drapery which, while attractive, varied and perspicuous, should make the beautiful object it adorns the more prominent and conspicuous.

This is eminently the age of self-made men.

The stately corpse of learned youth sent out from our colleges are of greater caliber and of more practical knowledge, disciplin and skill. There are tall captains among them which will command great forces and achiev great succes.

But a flood-wood company is also coming. Not with gingerly step and fine music, from the campus from our learned institutions, it is true,—but with untrained steps and ungainly forms they tramp, tramp, tramp with a solid tread, which means strength, and decision, and importance. They come from wood and dale, from cabin and hovel, from attic and lane, from poverty and want,—but they come to force their way to positions of importance and possessions of worth. They come not in broad-cloth and finery, but in homespun and aprons; not with dumb bells and athletic clubs, but with instruments of industry; not for parade and show, but for hard blows and useful work.

We need the college-bred and the home-bred, but whether from college or forest, they must be self-bred—the refined metal from the furnace of crucial disciplin. These alone will command places of importance and power, for these alone become our stalwart workers, our cunning geniuses and our practical thinkers. These are they who forge their way to the head of our business enterprises, not perhaps through accustomed paths, but through ruf, rugged, untrodden ways; not to supplant others, but to make places for themselves; not content with the known, but pressing on to the unknown.

Ah, these are the men who move the world, and move it to advance it.

ILL LUCK.

The most successful men have what is called ill luck, and plenty of it. But they so persistently shake it off, clinging only to their good luck, that in their ultimate successes they forget their ill luck, or have actually made them subserve their best purposes. With all of us ten to one of all our ventures have been failures. Yet instead of our being deprest by them, we should be so jubilant with our occasional successes that observers should suppose we had nothing but successes.

The idea of being deprest by our ill luck is ridiculous; for they are nearly all our own fault and should only make us the more thoughtful, cautious and farseeing in future ventures. Blameworthy blunders may be avoided, and by avoiding these we avoid most of our ill luck. If we still blunder on, we should be ashamed to mention them, and not complain of the ill luck that follows.

Unavoidable ill luck is pitiable and should call forth the commiseration of every well wisher. Yet even this should be left behind us as speedily as possible, and not put on our back. Let us make the best of them, and not allow them to make the worst of us. If we cannot "get shed of them" let us bravely stand up under them, and make their very burden strengthen us to endure and live it down.

Alloy has to bear the blame of much of the ignorance and slovenliness and bad work of many a manipulator, whereas if gold is used, of course the blame is with the operator. We admit there is differences in amalgams, but the difference in price is so slight there is no excuse for using a poor article. "One-third silver and two-thirds tin make an amalgam good enough for me," said a cheap John the other day. "If people will have fifty-cent fillings," said quite a respectable dentist, "they cannot expect a three-dollar alloy; and they do not expect it." "But," said I, "how much difference is there in the cost of the material to fill a tooth? An ounce will fill at least a hundred and fifty cav-

ities. This is but a cent and a half with the best, and it is a cent with the poorest. With the first if properly done, it endures as well as the best of gold; with the other, there is neither durability nor safety. The best is certainly the cheapest."

I should be afraid to be classed as the lowest priced dentist of a community; to be reputed the cheapest and the best will do very well if you cannot go a step higher, and get such a reputation for your work as to get in quality, quantity and price the cream of the business. Try to get there. It is only to get for the quality of your work a greater reputation than for its price.

A writer says "it is impossible to prohibit the use of tobacco in our colleges." Yes, we presume it is; and so of swearing and low, licentious talk and conduct, and stealing each other's instruments, and the many other disreputable things which disgrace some colleges. But there are some things that can be done.

A Sunday-school teacher once told me: "Nothing on earth could keep boys from smoking cigarets, but I would flog my boy to an inch of his life if I caught him with one." I replied: "You cannot control your boys till you control yourself. While you and many of the teachers use cigars the boys will use cigarets, and by and by cigars, and finally dirty pipes. Boys gradually yield to the atmosphere they are in."

So it is in our colleges. "What is the atmosphere into which the students come?" is the most important question. An unruly school will make unruly boys. Instead of some of our colleges being such as young men of low morals would be ashamed to be rowdies, they are such in which clean young men are contaminated.

Spunk comes in very handy to keep a tooth dry when the napkin is not tolerated, or when even the dam can not be used. Cut a piece long enough to reach over two or three teeth and wide enough to cover the gum and the teeth. By pressing this somewhat tightly against them you make a coffer-dam. Sometimes it is necessary to lodge a similar piece against the gum and teeth on the inner and outward side.

KERNELS.

Salt water is good for inflamed eyes.

In ivy poisoning bathe the parts with hyposulfid of sodium.

For retaining rubber-dam in place we use sandarac varnish.

Dr. Eugene S. Talbot is one of the best scholars in the dental profession.

In the great desert of Africa the temperature often marks 150 degrees Fahr.

The itching of scaling, cutaneous eruptions is relieved by a diluted wash of benzoic acid.

After removing tartar and polishing the teeth, have the patient brush them with a solution of pyrozone.

A thin solution of soap in ether is a good coating to prevent the adhesion of plaster models from impressions.

In finishing an alloy filling add sufficient dry alloy flakes to the surface to thoroughly take up all superfluous mercury.

Separating rubber that has become stiff and hard will recover its elasticity if put into a vessel containing weak aqua ammonia.

Japan is becoming a hive of intelligent industry. Osaka alone last year furnished 100,000 boxes of matches at such a low price and of such good quality that they have found a ready market in India, China and even America. It employs 13,300 adults and children.

An accurate and plain chart of work done is often of great service. A duplicate given the patient at the finish is an additional convenience, and both a safeguard to after imposition and misunderstanding. With Allport's, or some other convenient chart, that may be found at any well-regulated dental depot, it is easily and quickly done, if it is done habitually.

Wheat has been grown in Alaska for many years. Recently large fields have been profitably grown. It would seem, from some statistics, that the farther north and the higher the altitude it is grown the harder and better the kernel. In plateaus of the Alps 3,600 feet high we find fields of good wheat. In Brazil it is found 5,000 feet above the sea; in Caucasus, at 8,000; in Abyssinia, at 10,000; and in Peru and Bolivia, at 11,000.

Obstinate sciatica is often signally relieved by five- or ten-drop doses three times a day of wine of colchicum.

It is delightful to see bright, strong, matured thoughts stand out boldly in terse, crisp, well-formed sentences.

Some complain of chloro-percha as a canal filler because it shrinks. Let such try gutta-percha dissolved in eucalyptus oil.

Paraffin on hot iron or steel is a good preservative from rust. When the metal has cooled rub the surface bright with a cloth.

To prevent the clouding of your mouth mirror, pass it through the flame of your gas or alcohol jet just before using it.

The drainage of the city of Mexico is so defective that the death rate is the highest of any town in the civilized world.

It is frequently much better to polish away superficial cavities than to drill into the sound enamel far enough to fill with gold.

Modern skill does not produce a steel finer, stronger and more flexible than the old Damascus steel of thousands of years ago.

Americans allow fortunes to go to waste that Europeans save. In the single article of waste paper England realizes \$56,500 a year.

It is said that 1 part of picric acid to 75 of water is a remarkably speedy cure for scalds and burns. Pain ceases immediately on its application.

Smoke is, by some, supposed to be almost without weight. But the weight of the smoke carried daily over London is estimated to weigh 300 tons.

Thomas A. Edison has discovered a new metal or alloy, which, mixed with iron, renders cast iron as tough and strong as wrought iron.

The temperature of the city of Mexico is so moderate that there is not a chimney, or grate, or stove in all the city. Cooking is principally done with charcoal in Dutch ovens.

One of the symptoms of the dying and of the dead is the result of a pin prick. When life is coursing through the circulation the blood comes to the surface, or at least closes at once and does not leave the slightest trace; but if the part is dead the puncture remains open. Sometimes this may be true on the limbs, for instance, while a puncture in more vital parts may close or even show sensation, if not blood.

A bit of cotton saturated with chloroform is nice for allaying toothache; adding a little creosote and oil of cloves, equal parts, makes the effect more permanent.

Only one-third of the surface of the earth is land, and one-third of this is covered with forest. Nearly a third of the remainder is either mountainous, rocky or desert.

Broken nerve broaches can be easily removed from root-canals after a dressing of twenty-five per cent pyrozone, applied on cotton, has been left in the canal for a few days.

Do not too freely condemn the third molars. With proper care most of them can be saved for many years. I am seventy-three years of age, and have three in sound condition.

In reducing gold filings and waste to an ingot, first cover with nitric acid to clear from iron, silver, etc. Filter out the acid, and, folding the filter paper with the fine gold, place all in the ingot. Cover with borax before melting.

Niagara Falls is reckoned to do as much work as 226,000;000 tons of coal could do in a year, taking the consumption of fuel at four pounds per horse-power per hour, almost exactly as much as the known coal in the world could do in one year.

Sulfuric acid followed by soda, and this by vaselin and warm water, is one of the best means of cleansing a root-canal. If there is an abscess, pump through the apex or fissure a fifty per cent sulfuric acid and destroy the sac, and thus kill the abscess.

Like the clothing of a pretty woman, it is not the superfluity and extravagance and furbelows that heighten beauty, but the dress that makes native attractions the more prominent—plain, yet rich; distinct, individual and eminently characteristic and yet prominent in simplicity, adaptation and appropriateness.

Good oxiphosphate ought to last for years if of good quality and properly used. Early crumbling and wearing away is evidence of bad material. It is true, the condition of some mouths are inimical to the best, but this is infrequent. Hot paraffin is one of the best coverings, while the cement is setting. Be sure to thoroughly cover the cervical walls.

It is not well to use a mix of alloy after it has begun to crystallize. That which is used immediately after mixing, and the mix stiff enough not to have an excess of mercury, is the stronger and better every way. Therefore, when there are several cavities prepared to be filled, you should not mix enough at once for all. Better be to the trouble of mixing two or three times.

A properly made paint of graphite and boiled linseed oil is the most suitable for protecting structural ironwork, roofs, etc., exposed to the destructive agencies of heat, cold, storms, etc.

The giant tortoise is one of the oldest living animals. One of 500 pounds in London has been in its present confinement 150 years, and when caught gave every evidence of mature, if not old, age.

Do not hesitate to fill small cavities. Waiting till they get bigger is a dangerous delay. If they cannot be polished away, fill them. This early work is specially desirable in small pits and fissures on the grinding surface of bicuspid and molars.

The idea that we should not extract very sore or abscessed teeth till the inflammation subsides is foolish. The extracting will be no more painful and the patient will certainly escape much suffering.

Copper may be made nearly as brilliant and as beautiful in polish, density and texture as gold by the addition, while melted, of six parts to the hundred of antimony. Its density may be still farther increased by adding a little magnesium and carbolate of lime.

Some suppose that the stain of an amalgam comes from its oxidation by age. This may add to it, but there is at least nearly as much stain when first made. If the tin is burned it is sure to make black stain. But besides this, and that which cannot be avoided, is the stain of the silver.

One of the reasons alloy and amalgam are in disfavor with some is because they are slovenly used and poorly finished. Everything a dentist does should be done well. A good alloy will take on a beautiful polish that will resist the adhesion of food, etc., equally as well as a filling of gold.

Editor Patterson, of the *Western*, intimates that the cause of our loss of the *Items of Interest* was our failure as an editor. No; it was the failure of the Wilmington Dental Co. The popularity and value of our pet magazine is shown by the fact that the present owner had to pay \$4,000 for it. It was the leading dental journal in the world, unless we except the *Cosmos*. The name of our new venture was changed from WELCH'S MONTHLY to DENTAL BRIEF because the first was not considered definite enough. As for its standing, though it is only in its third year, we should be willing already to compare subscription list with the *Western Journal*, though it has entered its twelfth volume.

FOR OUR PATIENTS.

LUCK *vs.* WORK.

Bad luck is laziness run wild;
Good luck and good hard work are twins.
Luck waits for weather cool and mild,
While Work a goodly fortune wins.

Luck walks, while Work rides in a gig;
And sulking, fretting, Luck reclines
On easy lounge, while Work, with big
Strong blows, Luck's fetters binds.

In ev'ning sunbeams Luck sees gold,
And, anxious, waits to see it fall;
While Work, with skill and zeal, makes bold
To earn a rich round golden ball.

Luck builds a castle in the air,
Work earns one on the solid ground;
Luck seeks to fill his without care,
Work delves where mines of gold are found.

So Luck is hardly what it seems,
His best wrought schemes are sure to miss;
For Luck goes barefoot, as he dreams
Of wealth, while work is earning his.

T. B. W.

SAVING AN OLD TOOTH.

Ernest McGaffey.

The doctor stretched my mouth open until he could see my heart beat. Then he said cautiously, "I think we can save that tooth." Running a long, inquisitive wire into the tooth to the depth of about sixteen inches, he stirred up something known as a "nerve." In response to my fervent yell he asked, "Does that hurt?" I wiped tears from my eyes and simply said "Yes." Then he got some crowbars and pried here and there at the tooth, occasionally waking up that cussed nerve which had been growling ever since at its unceremonious handling. Then he said: "We will have to kill the nerve first, and fill the tooth afterward."

"How long will that take?" I askt, anxiously.

"Oh, you can't tell about that," he replied; "you can have it pulled if you prefer it," he added.

I went to the glass and smiled at myself. It was as I feared. If that tooth was yanked out my smile was ruined. There is nothing so unpleasant as a fore-shortened smile. The absence of the tooth at either end gives it a wolfish character. A tooth out of the center of a smile simply wrecks it. No, I could not afford to have that tooth pulled.

Stimulated then by the strongest ingredients in the male character, viz.: vanity, I resolved to take my medicine, and so the pact was made.

I began to make regular trips to his office, and soon became inured to scenes that at first chilled the glad blood in my veins and caused the soft and significant goose-pimples to start from my flesh as a trumpet call. People with a strained expression of countenance met there, and the doctor's little room, which I had mentally named the chamber of horrors, re-echoed with groans, yells and imprecations. And yet he was a gentle-hearted man. He did not revel in those pandemoniums of whoops and sobs, but the stern necessities of dentistry compelled them.

His tools of torture, called by courtesy dental instruments, were many and varied. He was very skilful in his profession, and when he took a job he did it in first-class style. The dental tools are simply copies in miniature of articles used in the Spanish Inquisition and on refractory prisoners in the Tower of London. There are monkey wrenches, rasps, files, gouges, cleavers, picks, squeezers, drills, daggers, little crowbars, punches, chisels, pincers, and long wire feelers with prehensile, palpitating tips that can reach down through the roots of a throbbing tooth and fish up a yell from your inner consciousness. When a painstaking dentist cannot hurt you with the cold steel he lights a small alcohol lamp, and heats one of his little spades red-hot, and hovers over you with an expectant smile. Then he deftly inserts this into your mouth, and when you give a yell he says, "Does that hurt?"

Well, the first thing to do was to kill the nerve. The nerve is a long, starved angle-worm growth that starts in the tooth somewhere and goes down and up with three distinct tentacles or feelers. One of these connects with your brain, one with your heart and the other with your soul. Every time the nerve is touched an electric shock goes to each of these terminal points, and you feel as if you had been shot, stabbed and burned with a hot iron at one and the same time.

The doctor toyed with this nerve of mine for some weeks. Whenever the combination was made I used to kick out with one foot and cry "Ow!" or grab his hand and say appealingly, "Oh, don't." Then he would say, "We won't hurt you."

Sometimes he would lull me into a fancied security, and I would be counting three hundred, or saying to myself, "Even this will pass away," when all of a sudden four thousand rattlesnakes would dart their venom into me simultaneously, a hundred mules would kick me, a score of bumble-bees would sock their stingers into me, and the world would come to an end. Then I would know that he had stepped on the nerve with the "teaser." The "teaser" is the boss "feeler," being fine as a horse-hair and of the most undoubted yell-producing power.

After a long while the nerve capitulated. I had lost eleven pounds in the process, but a great gain had been made. The tooth was now as tender as a mush and milk poultice, and even to tickle it with an ostrich tip would produce exquisit agony. He used to soothe it from time to time with various lotions, and finally he began to quarry out the dead bone a little. This was gruesome work, for there were tender places all over the tooth, as thick as spots on a leopard, and every time he jammed a chisel into one of them I almost fainted. I was kept in a continuous cold sweat for weeks thinking about it before I went, going through with it while I was at the office, and thinking about it after I had left.

After he had amused himself by digging and blasting out a lot of little galleries in the upper part of the tooth he began to "treat" the root apertures.

This is a most ingenious and refined cruelty, and by some dentists is preferred even to nerve killing. The process is to first feel around with the "teaser" on the sensitive roots; next to put a little cotton dipt in carbolic or nitric acid, creosote or turpentine around the "teaser," and stick it away down into the same place. This hurts powerfully. It cleanses the roots of impurities, though. A lighted match would be less painful, but the aperture is not large enough to admit one. After this some cotton filling is stuffed in, and you are told to come back in three days. That night you awake at twelve o'clock with "your soul in arms and eager for the fray." You dig out all the filling and pace up and down the room, saying at intervals, "Oh, gosh! why didn't I have it pulled?"

Then you go back and the treatment is renewed. The doc-

tor varied the upper filling by putting in hard rubber filling after awhile. This is put in soft and hot, and hardens when it gets cold.

When you wake up with this hurting you at night, you can't get it out. A red-hot hairpin may get some of it out, but you are liable to glance off and get your gums into the sear and yellow. So you generally recoup by taking the Lord's name, as some say, in vain, but it soothes you, anyway.

When the roots are ready to fill, a gladsome joy pervades your entire system. The birds sing, the skies are bright, roses bloom, men and women are better, the whole world has changed in the twinkling of an eye. The day the roots are filled you go home and kiss your mother, and eat your supper on both sides of your mouth. For, mark you, when a tooth is being filled, the jaw it adorns is practically side-tracked till the crucifixion is over.

The last scene in the drama was when the doctor put in the top filling. The roots had already been plugged with a red putty which had hardened into a regular tooth cement. I lay back in the chair and the tap, tap of the hammer and punch sounded as melodious as Joaquin Miller's line of "A woodpecker pounded a pine top shell."

I was wrapt in a dream of delicious joy. Not like some of my acquaintances would I be forced to launch myself into society with a fragmentary misfit smile. No, indeed. And when the whole thing was through I shook the doctor's hand, and he told me he had never meant all along to so kill me by inches, but that dentistry was dentistry.

Then I went to the glass and smiled. *Chicago Herald.*

WHY MEN FAIL.

Few men come up to their highest measure of success. Some fail through timidity or lack of nerve. They are unwilling to take the risks incident to life, and fail through fear in venturing on ordinary duties. They lack pluck. Others fail through imprudence, lack of discretion, care, or sound judgment. They over-estimate the future and build air-castles, and venture beyond their depth, and fail and fall. Others, again, fail through lack of application and perseverance. They begin with good resolves, but soon get tired of that, and want a change, thinking they can do much better at something else. Thus they fritter life away, and succeed at nothing. According to *Great Thoughts*, others waste time and money and fail through ruinous habits; tobacco, whisky and beer spoil them for business, drive their

best customers from them, and scatter their prospects of success. Some fail for want of brains, education, and fitness for their calling; they lack a knowledge of human nature and the motives that actuate men. They have not qualified themselves for their occupation by practical education. Still others are unsuccessful because circumstances are against them; through no fault of theirs, death or the failure of others causes losses and expenses which no effort on their part can make up or repair.

Family Doctor.

DO YOUR BEST.

A minister tells how when a boy he was a great whistler, and sometimes whistled in unusual and unseemly places. One day, not long since, says an exchange, he came out of a hotel whistling quite low. A little boy playing in the yard heard him, and said, "Is that the best you can whistle?"

"No," said the minister, "can you beat it?"

The boy said he could, and the minister said, "Well, let's hear you."

The little fellow began his whistle, and then insisted that the minister should try again. He did so, and the boy acknowledged that it was good whistling, and as he started away the little fellow said:

"Well, if you can whistle better, what were you whistling that way for?"

Sure enough, why should not anyone do his best, if he does anything? The world has plenty of poor, slipshod, third-class work done by people who could do better if they would. Let every boy and girl try to do their best, whether in whistling, singing, working or playing.

An old woman whose husband was ill in bed sent for the doctor, who came and saw the old man. "I will send him some medicine," he said, on leaving, "which must be taken in a recumbent posture." After he had gone the old woman sat down, greatly puzzled. "The recumbent posture—a recumbent posture!" she kept repeating. "I haven't one." At last she thought, "I will go and see if old Mrs. Smith has one to lend me." Accordingly she went and said to her neighbor, "Have you a recumbent posture to lend me to put some medicine in?" Mrs. Smith, who was as ignorant as her friend, replied, "I had one, but to tell you the truth, I have lost it."

IMPORTANCE OF FRUIT.

Prof. Gradley says: Each year people appreciate more fully the value of fruit, and eat it, not as a luxury, but as a food. Fruits are nourishing, refreshing, appetizing and purifying, and consequently have effect on the health and the complexion. Grapes and apples are highly nutritious. Grapes and grape juice usually agree with the most delicate persons, for they are easily digested. Nothing is easier to digest than a baked apple, taken either with or without cream. Oranges, lemons and limes are of some value as a means of improving the complexion, and they are especially good if taken before breakfast, with moderation.

Ripe peaches are easy of digestion and are fattening. Nothing is better to enrich the blood than strawberries, which contain a larger percentage of iron than any other fruit. Fruits with firm flesh, like apples, cherries or plums, should be thoroughly masticated, otherwise they are difficult to digest. The skin of raw fruit should never be eaten, and before eating grapes or any small fruit care should be taken to remove all impurities by washing. Never swallow grape stones. Stale fruit and unripe fruit should not be eaten, and very acid fruit should not be taken with farinaceous foods.

Prac. Rev.

DANGER IN TIN CANS.

Open a can of peaches, apricots, cherries or other fruit—for all fruit is acidulous—let it stand for some time, and the fruit acids and the tin are ready to do their work of poisoning. A chemical knowledge that tells just how the dangerous compound is created is unnecessary to an avoidance of the peril. The rule to follow is never to make lemonade or other acidulated drinks in a tin bucket, nor allow them to stand in a vessel of tin; and in the case of canned fruits or fish, immediately upon opening the can turn the contents out upon an earthenware plate or into a dish that is made of earthenware or glass.

Fruits in hermetically sealed cans, if properly prepared, generate no poison. As soon as opened the action of the acid on the tin, with the aid of the atmosphere, begins, and in a short time the result is a deadly poison.

Science News.

DENTAL BRIEF.

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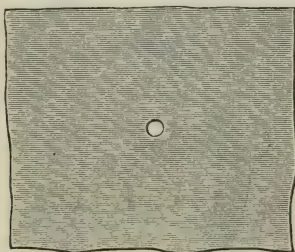
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ORIGINAL COMMUNICATIONS.

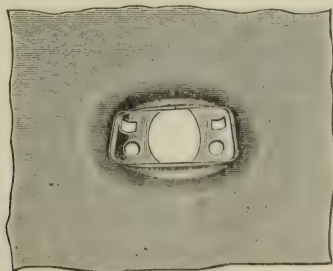
ADJUSTING THE RUBBER-DAM WITH THE IVORY CLAMPS.

By One Who Uses Them.

The first important consideration is the size of the aperture to make in the rubber. This will be better understood by an illustration. In applying the rubber to lower molar teeth, what size orifice shall be made in the rubber? Experience has taught me to use a comparatively large size, thus,

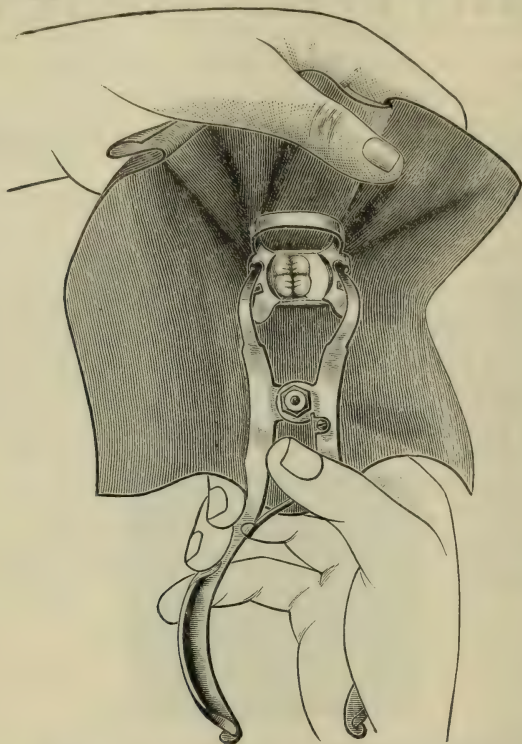


which will be explained further on in this paper. The next consideration is to adjust the rubber to the clamp so that the rubber may be carried onto the tooth edge in advance, as you will see in diagram No. 2:



Thin lips of rubber are thrown up diagonally from one flange to the other, as seen on the inverted clamp. The idea is, that

these thin lips of rubber (made taut as the clamp is spread) will pass edge in advance between contiguous teeth. The next illustration is given to show the relative position of the hands, how the rubber is controlled, and the manner in which the forceps should be held.



It will be evident that when the rubber is applied in this way, the tooth to which the rubber is to be adjusted can readily be seen through the jaws of the clamp, and the operator can so control the rubber that the thin edges may pass without any folds between the teeth.

The forefinger of the right hand controls the rubber to the varying widths of the teeth. After the rubber is thus adjusted to the tooth, and the clamp is allowed to grasp the tooth, the next thing to do, if the operation is to be prolonged, is to strip the rubber from the flanges. This is done by the forefinger or with a round-edged flat burnisher. Stripping the rubber sometimes may press one side of the clamp into the gum so that the rubber may not gain contact with the tooth, so that it becomes necessary often to ease the clamp off the gum very cautiously, lest you allow the rubber to slip up between the jaws of the clamp and the

tooth. If these precautions are taken, you have the operation complete.

Now you have applied the dam, with a little practice you will do it very quickly, and you have applied it with the edge facing the gingival margin of the gum, and these thin lips of rubber will creep up between the gum and the tooth and very effectively shut out moisture. It would not have the same tendency to do this if the orifice you made in the rubber was small, for the rubber would bind on the tooth and would not work its way up to the place desired.

Further, you have applied the dam with more satisfaction to yourself and patient. The rubber is not all covered with saliva, that has to be dried away before beginning the operation. No need of tying ligatures around the tooth clasped. There are no folds in the rubber to allow leakage. The rubber is not torn unless cut by some sharp edge on the margin of the cavity, which any good operator would cut away, as well as cleanse from *débris* any interdental foreign substance lodged between the teeth, before attempting to apply the rubber. Where other teeth are involved in the operation, additional apertures are made in the rubber anterior to the one and smaller than the orifice which you make for the reception of the clamps, to which ligatures are necessarily applied.

BICUSPID PORCELAIN JACKET CROWNS.

W. A. Capon, D.D.S., Philadelphia.

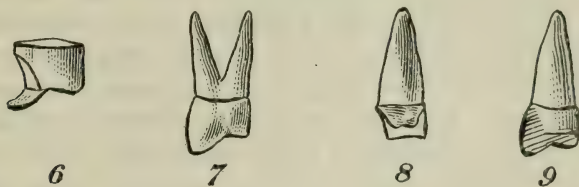
The crowning of teeth is now practiced by every dentist, and there are so many varieties that one may indulge in having some favorit kind without its preference being criticised. Many methods are very similar, and they all, with one exception, depend on a pin or screw post for retention, thereby compelling the absence of a pulp. They all may have the desired natural appearance, but time and use will only determine their practicability under various circumstances. It is not my intention to write of all the various crowns that are made, or try to tell how and where they can be most successfully applied; but it is my desire to attempt to describe a crown specially adapted to bicuspids that is not universally used or generally known to the profession. The importance of a reliable bicuspid artificial crown is only equaled by the natural tooth itself. These teeth have a natural predisposition to decay and become discolored, their position in the arch enforces great use and strain. There are eight of

them, all especially useful and desirable for sake of appearance. Following the assertion that bicuspid crowns are the most needed, I must add that they require more strength than most others, for they are all large-crowned and small-rooted teeth in their natural state, and, of course, in our attempts to make them appear realistic the root gets more than it can stand, or its shortness prevents a sufficiently long enough pin to insure strength. These facts being accepted by many dentists, they are forced to resort to a gold cap, an excellent substitute in some ways, but a glaring insult to the fastidious and esthetically inclined patient. A crown that is always acceptable and proven to be staunch and reliable when others have failed is the porcelain jacket, made of platinum and a porcelain veneer, without the use of a pin in the root-canal. There are two kinds, differing little in construction, but each having their particular place. The first I shall describe can be used whether a long or short bite, the space narrow or wide, upper or lower denture. The preparation of the crown, or remainder of crown (oftener the latter), is very similar to a gold cap, with the exception that the buccal surface must be ground to allow for the veneer, as in Fig. 1. The circumference is taken



with wire and cut from platinum plate, gage 30, allowing for a lap joint that is always used in this crown as in other porcelain jacket crowns that I have described on former occasions. Solder the joint with a small quantity of pure gold, then cut the edge to comply with the gum margin, and fit on root as in Fig. 2, placing the joint of platinum on the lingual side. If found to be a little large, compress the edge with bent-nose pliers, but in any case the fitting must be corrected before adding porcelain. The band is now marked to be cut almost even with the tooth crown, or at least close enough to be free of the opposing tooth. Solder a piece of iridio-platinum to the inner half of band, leaving the front half free, as in Fig. 3. Cut and trim the surface till it resembles an ordinary cap with half soldered top. Now grind the face of cap intended for the reception of the veneer (Fig. 4), then take contouring pliers that most dentists possess, with beaks like Fig. 5, and press into the front half of the cap, and you have an

excellently formed cusp, and will leave the skeleton of metal resembling Fig. 6, which is now ready to be fitted. With a coarse-pointed instrument press and indentate the ground thin front, making it close to the tooth and a better surface for porcelain. Now choose a veneer of proper shade and approximate size and grind till it fairly fits the space intended for it. Mix porcelain and pack into every little space, and press veneer into position, and then draw the whole crown carefully, and after the proper precautions fuse in a small furnace. Try it on the tooth again, and if the veneer is too full or too long, grind and polish with sandpaper and trust to second baking for renewal of gloss—of course, adding more body where necessary, the sides being the most likely place to require it. After the final baking the metal part is polished, and the crown is finished and ready for setting,



see Fig. 7. It is hollow like a gold cap, has clean, hard metal on the grinding surface and a porcelain front, to give it a natural appearance. It can be used over a living tooth, easy of access in case of treatment, and readily repaired if broken. It is one of the only ways to crown those very short teeth with a correspondingly short bite so often encountered and bothersome to the operator.

There is another crown, very similar in construction, that I find especially adapted to a built-up root or badly broken tooth where there is a fair length of bite. The measurement is taken in the same way, and procedure the same in making and fitting the band. As porcelain is used for the grinding surface, no metal is to be soldered on that surface. After the band is fitted the face is ground to allow for the veneer, Fig. 8. Then, while in place, platinum foil is tucked over the end of the root or portion of tooth to be crowned, and porcelain body is packed over the whole surface even with edges of band. The veneer is put into position, and the whole crown is drawn and placed in the furnace ready for fusing. After first baking, it is placed on the root and the bite noted, then finished by making cusps of porcelain and fusing the second time. When completed the outward

appearance of the crown is represented by Fig. 9. The clear portion represents the platinum and the dark lines the porcelain. The platinum foil is still on the inside. It is optional whether it be removed or left. Its only purpose was to form a matrix for the porcelain.

This crown is exceedingly strong and natural in appearance, and easily made and applied. I have used it for several years on the most undesirable roots possible to do anything with, and have yet to report the first failure. I have also had splendid success in joining first and second bicuspid together where both roots have been weak by soldering the bands together before the porcelain is added, and it is very pleasant to note what satisfactory work such wrecks can be made do if carefully treated. This class of crown makes an excellent abutment for a gold bridge, as well as for an all porcelain bridge, and is a wonderful help in small extensions where a gold cap is undesirable, for there is no difficulty in soldering one or several teeth, if properly invested and heated. Thin porcelain facings for all teeth are made for the purpose. They are inexpensive, thereby enabling every one to keep a few hundred in stock, saving much time in matching shades and also impresses your patient with the fact that you are an artistic dentist, trying to adapt yourself to all dental requirements. To repair a crown when the veneer has been broken, do not cut the remaining portion off, but loosen it about the neck and work it gently off; and if the ground part of platinum is found to have been torn away by the veneer, solder a piece of platinum foil on the inside of cap which will take the place of lost portion. These directions apply to all other porcelain jacket crowns.

This class of work just described must be made in the mouth, for no bending or fitting at the neck can be done after it is finished, for reasons unnecessary to explain.

In conclusion, I feel it proper to make a plea for porcelain jacket crowns for any and all teeth. It is now nine years since I first introduced this class of work in Philadelphia, and during that time I have demonstrated its qualities in colleges and before dental societies many times. During this period I have made several hundred porcelain jackets for all kinds of teeth, in every portion of the mouth, singly, in pairs, fours, sixes and even eight at once. I have taken the most deplorable-looking mouths, and by this method have made them satisfactory in looks and use, and yet I am frequently asked by dentists, "How do they stay? Where is the secret of their strength?" Yet the fact remains

that they do stay and are strong, otherwise I should have so many troubles that my chosen profession would cease to be a means of profit or pleasure, and a change not only necessary, but compulsory.

MYSTERIOUS TOOTH DECAY.

T. B. Welch, M.D.

It is a remarkable fact that the health or ill health of a person is no criterion by which to judge of the soundness or unsoundness of the teeth. That is, a person may be an invalid for years and have sound teeth; or he may be in general sound health and have carious teeth. We have patients coming to us whose teeth for years have had little tendency to decay, when, all at once, without any apparent cause, and though the health remains much the same, the teeth decay rapidly.

I had an instance of this in a lady whose care of her teeth was proverbial. For a long time I had little to do but to examine her teeth every six months. All at once, though her body was vigorous, she came to me affrighted, with caries on several of her teeth; and I, too, was astonished as my explorer plunged into proximal cavities that were really serious. Even on the surface of her teeth near their necks were shallow disintegrations that surprised us both. This tendency to decay lasted for a year or more, when gradually it disappeared, and for a long period the teeth remained in a sound condition again, and without special attention.

We have all, perhaps, observed consumptives, who, as they decline, have less tendency to tooth decay; and yet, at times, decay is rapid.

Then, again, without apparent cause, the teeth may become sore and loose, and the gums inflame and lose their hold on the teeth, while sanguinary and granular tartar works down on the roots and accumulates, till we have genuine pyorrhea; and all this without decay of the teeth. In fact, it is seldom this almost incurable disease and caries go together.

It is generally supposed that dyspeptics must have bad teeth, and yet they frequently have good teeth. I was a severe dyspeptic for thirty years, and did not take special care of my teeth, either, yet I have good teeth at more than 70.

Why is it that persons between 20 and 40 years are less

liable to caries than between 10 and 20?—and still less between 40 and 60?

And why does caries cease for a long time after the teeth are well filled, and altogether after they are removed from the mouth?—and also indefinitely after death, though they are exposed to surroundings which destroy nearly every vestige of the rest of the body?

Why are vegetarians and fruit-eaters more exempt from caries than meat-eaters?

If we said to all these questions, we do not know, we should not be far from correct. If the best known pathologists were to say the same, it would be pardonable ignorance. Yet we all have our theories. But, pray, what is a theory if not a series of facts, dependent on and proving each other?

For instance:

The lady I refer to was pregnant when her teeth took on such a tendency to decay, and this continued for some time after childbirth. But why should this circumstance cause disturbance in the teeth? There seemed to be no poverty of the blood, indigestion, nervous irritability or other weakness. She was as vigorous, high-spirited and vivacious as ever. It may be the embryo was, for the last four months, taking too rapidly of the bony ingredients of her food, the greater activity of the vital forces may have acted on the animal portion of the teeth to dissolve them, or extra-stimulation may have tended to fermentation of the fluids of the mouth, all these; to acidity of the glands of the mouth, or—well, will the reader supply the rest?—and perhaps laugh at the reasons given? For if these are the true explanations, why did not this tendency to tooth decay continue after lactation?

Consumption frequently indicates alkalinity and exemption from tooth decay, but sometimes the 'opposit.

Pyorrhea and caries are seldom found together, because the former almost always indicates an alkaline condition.

In dyspepsia the stomach may be so sharply acid that a tooth carried into it might be dissolved, and yet the excretions of the glands of the mouth may be so alkaline as to leave tartar, which is alkaline, on the teeth; yes, and on artificial teeth, too.

There are instances where the preponderance of alkalinity produces a dissolution of the teeth.

A person changing from a meat diet to one principally of fruit will usually find a gradual arrest of caries, and a change for the better for the whole body; but sometimes the teeth will be

“set on edge” and soften and become loose. We sometimes think we have the secret of the arrest of caries in fruit-eaters and vegetarians, from the fact that fruit acids counteract the nitric, sulfuric and other tooth-destroying acids of meat decomposition; and that the increase of tooth destruction with some fruit-eaters is the excessive malic, citric, tartaric and other acids of fruit. One cause of the teeth being less liable to decay as we grow old is, perhaps, that there is less animal matter to attack, and that what remains becomes harder and more resisting cement.

There seems to be, therefore, one fact underlying nearly all our theories, namely, that tooth decay is caused by the dissolving effect of acid. But from whence comes this acid? And what acid is it? And how does it do its work?

We believe tooth decay is caused largely by the formation of nitric acid, produced by the fermentation of animal food on, and especially between the teeth; that this causes the dissolving out of the animal organic cement structure, leaving the mineral, inorganic portion to crumble away. Hydrochloric, sulfuric and acetic acids are also formed by various kinds of food, and all of these are destructive, even to the hard enamel. At other times strong alkalinity dissolving out the mineral portion.

It is contended by many that tooth decay is produced by micro-organisms eating into its substance. Others believe caries is caused by the acid produced by the activity of these micro-organisms. Still others assert we have evidence that the acidity is not the result of their activity, but of their death—that as all fermentation is a process of death through the generative life of millions of micro-organisms, so the acidity of the culmination of fermentation is caused by their death.

But all agree if the teeth are kept clean, and the secretions of the mouth healthy these destructive acids will be neutralized, and these micro-organisms will not thrive.

But here, too, we have a lesson to learn. Many clean the inner and outward surfaces of the teeth, neglecting the spaces between them, which are the most prolific sources of decay. It is seldom we see caries where there is not proximal contact of the teeth, or hidden pockets for the generation of acid. Even where there is decay on the grinding surface, we shall find lodgment for food and generation of acid in flaws of the cement.

KANSAS DENTISTS.

Prof. Johnson, of Chicago.

I attended a meeting of the Kansas State Dental Association a week ago. Of course, you know it is considered the home of the Populist. Yet I must say some of the best men that ever breathed the free air of the United States are there, and those I talked with are as much ashamed of the Populist sentiment as you and I are. I want to say, furthermore, that I have never met a body of men who were so uniformly in sympathy with each other, and under every circumstance extended the right hand of fellowship to each other as they did; and the thing that impressed me most was to see two or three men from the same town congregating and speaking highly of their fellow practitioners. I did not hear one word of envy expressed. I noticed particularly that if one of the members from a certain town read a paper, the other man in the town showed his appreciation of it. The dentists I met at this society were educated men, and as broad in their knowledge as any men I have met in the profession anywhere. I was proud of my profession when I met with this association. Even among the dentists in small towns there was harmony of feeling and a lack of envy and narrow-mindedness. It was an object lesson. I have met with many dentists, but I never met a State society in which there was not some personal jealousy among practitioners of the same town, and it always managed to crop out somewhere. I trust that the formation of fellowship clubs will do away with this feeling. I think that if practitioners come in contact with each other in society work, and become better acquainted, their respect for each other will be greater.

The more the holdings of Dr. George Evans, of Paris, are investigated the more valuable they appear. They will probably amount to \$6,500,000. He had one distinction thrust on him that in his modesty he did not make known. He was a duke.

It appears he had two nephews, one, John Evans, who was an incubus, living almost wholly and royally on his uncle's wealth, till finally he was disinherited for his profligacy. He was known as Marquis d'Oyley, and was honored by kings and princes. The other nephew, Theodore Evans, and his family are handsomely provided for in the uncle's will. There is also an adopted son and other kinsfolk.

RULES FOR THE PREPARATION OF MARGINS.

Dr. W. E. Harper, in Ill. Society.

Rule 1. Extend cavity margins in every direction until sound enamel is reached.

The application of this rule requires special care in cavities occurring in the gingival third of the labial, buccal and lingual surfaces due to erosion or contact with secretions from diseased tissue.

Rule 2. A fissured, sulcate or angular developmental groove should be cut out in its entire length and included in the cavity.

In cavities occurring on the lingual surfaces of the upper incisors and occlusal surfaces of the bicuspid and molars this rule should be strictly enforced.

Rule 3. Further extension should be made, if necessary, till full length enamel rods are supported by dentin.

In cavities for gold or amalgam, there are no exceptions to the application of this rule. The cavity margins should be extended by cutting the enamel rods in the direction of their length with a keen chisel. (When doing this the line of cleavage should be noted to enable us to best decide what bevel to give to the marginal edge.)

Rule 4. "Cut the enamel to such a point that the surface of the filling may be so formed that the enamel margin will be self-cleansing, or be protected by the gum margin." (G. V. Black.)

The labial, buccal and lingual margins of all proximal cavities should be extended sufficiently to permit contact of the lips, cheeks and tongue with the enamel margin, and to be further cleansed by the excursion of food over them during mastication.

The gingival margin should be carried beneath the free margin of the gum, or in extreme recession or destruction of this tissue, to the widest part of the interproximate space. This would permit the circulation of the saliva to constantly render the gingival margin clean.

Rule 5. "Do not form an enamel margin in such a position as to leave a small portion of enamel between it and one of the developmental grooves." (G. V. Black.)

Margins on the occlusal or incisal surfaces which approach closely a developmental groove should be cut to or beyond that point, because of the great liability to breakage on these lines.

Rule 6. The outline of enamel margins exposed to view (as on the labial surfaces) should be in definit curves or straight lines.

Cavities occurring on the labial and buccal surfaces of the ten anterior teeth should be cut on harmonious curves or straight lines for esthetic reasons.

Rule 7. The labial, buccal and lingual margins (the fillings of which are exposed to the force of mastication) should be parallel to each other and at right angles to the seat of the cavity.

In following this rule there is less danger of leakage along these margins and walls, as in shrinkage or slight crushing of the filling material, adaptation is still maintained at these points; if these margins and walls are permitted to overhang, the filling is crushed against the seat and drawn an equivalent amount from the buccal and lingual margins, resulting in leakage.

All margins should be cut smooth, and after applying the above rules, should be beveled, so as to avoid short ends and insure full length enamel rods.

RULES FOR THE PREPARATION OF THE SEAT AND STEP OF A CAVITY.

Rule 1. The seat must be flat or in steps (which is equivalent) and at right angles to the long axis of the tooth and direction of the strain.

The crushing strain is the force of mastication brought directly on the exposed surface of the filling, and through it to the gingival wall of the cavity. This gingival wall, with any additional steps nearer the occlusal surface, constitutes the seat of the cavity, as it must carry the load.

The crushing strain is most effectually resisted by preparing the seat and steps perfectly flat, and at right angles to the direction of the force, thus avoiding any tendency to sliding under the influence of heavy strain.

To cut the seat, I use an inverted cone bur, holding it parallel to the length of the tooth.

Rule 2. The extent of the seat and step must be equal to the surface of the filling exposed to the strain.

DEFINITIONS OF SHAPE OF CAVITIES.

Enamel Margin.—A line on the surface of a tooth, forming the boundary of the cavity.

Marginal Edge.—The cut surface of the enamel margin, including its thickness.

The classification of cavities given is based on their form and location, and by its means we are able to formulate a few sets of rules which practically meet all the requirements for cavity preparation.

Presented in the form of a diagram, its simplicity can be readily appreciated, and enables us at a glance to assign any cavity to its proper class and division, thus insuring the application of rules best adapted to the requirements of the case.

In my judgment the rules as presented would make ideal cavities, and should be enforced in general with but slight modification, though they permit considerable latitude should the operator have good reasons for the change.

TO MAKE THIN HARD DISKS.

Put an ordinary felt wheel on the screw-chuck of the lathe, and with a thin, sharp knife cut while the lathe is running rapidly, starting near the edge and gradually increasing the thickness to one-eighth or three-sixteenths of an inch at the center. Three or four can be made from an ordinary felt wheel. They are then dipped in white shellac varnish and dried on a piece of glass or board. When thoroughly dried, put on the chuck again, and while it is running apply a little heat, at the same time pressing the side with a small stick or tooth-brush handle. In this way they can be made of any shape desired. When they are cool hold a coarse vulcanite file to the edge of the running disk and bring it to a sharp edge.

Dr. Pessio.

Better have a few good familiar remedies on hand than many that you are in doubt about, or that you are experimenting with. So with your treatment of a given class. Make a study of them till you are clearly satisfied with what you should do, and then do it. Continually varying your remedies and your practice is confusing, and tends to indecision and unreliable practice. Not that we should never take on anything new, or never discard anything old, or never vary our practice, but have some things settled, and as many things settled as possible, and then in investigating new things or processes go at it deliberately, systematically and intelligently, and settle that. This never knowing and being forever coming to a knowledge of the truth is vexatious, bewildering and childish.

England has 1,000,000 persons who are either paupers in workhouses, criminals in prisons, homeless of great cities or wanderers.

RECENT PATENTS RELATING TO DENTISTRY.

597384, Dental cuspidor, George Booth, Toronto, Canada.

597582, Teeth regulator, Miland A. Knapp, Minneapolis, Minn.

597469, Dental Plugger, Frank L. Marshall, Boston, Mass.

597811, Disinfecting holder, Daniel N. Calkins, assignor to Rochester Germicide Company, Rochester, N. Y.

597894, Disinfecting apparatus, Florence Carman, assignor of one-third to F. Meade, Philadelphia, Pa.

597719, Gas-administering apparatus, Wm. A. Johnston and A. W. Browne, Prince's Bay, N. Y., assignors to S. S. White Dental Manufacturing Co., Philadelphia, Pa.

598053, Disinfecting apparatus, Edward D. Lewis, assignor to W. C. Shields, St. Louis, Mo., and Cannon Chemical Co., of Missouri.

597781, Apparatus for administering gas, Paul Ring, assignor to Crane & King Oxygen Works, New York, N. Y.

598242, Valve and gauge for administering oxygen or other gases.

598103, Disinfecting apparatus, Wm. A. La Fave, New Haven, Conn.

598295, Dental engin, James D. Smith, assignor of one-fourth to J. S. Andrews, Canandaigua, N. Y.

598235, Dental appliance, Julius Weiss, Vienna, Austro-Hungary.

TRADE-MARKS.

31175, Tooth powder, Warren H. Poley, Philadelphia, Pa.

31186, Chemical compound used as an antiseptic, Knoll & Co., Ludwigshafen, Germany.

It is sometimes desirable to use a clamp where it is difficult to keep the dam away from the cavity which is being filled, especially where the cavity is in the buccal surface. And yet the pain caused by the sharp teeth or serrations or edges of the clamp is seriously objectionable, especially if it tips forward, pressing into the anterior of the tooth. If these points or edges are filed away, and a small rubber tube be placed over the clamp, leaving the ends of the tubing a little longer than the clamp, it will prevent it from tipping and be much more comfortable to the patient.

CURRENT THOUGHTS.

ROUTINE WORK.

F. C. Hubbard.

The routine work of life is drudgery. It cannot be otherwise, though it may be modified in spirit. There is a way of doing life's ordinary work so that you enjoy it and bless others while doing it. It is possible to put the artistic spirit into the artisan toil. It is possible to have delight in our work or in the results to be achieved, so that we shall forget the dull and tireless round of duty. Duties are pleasant or irksome as we put heart, and thought, and purpose into them. Not how much, but how well; not where, but in what spirit. "Whatever ye do, do it heartily, as to the Lord and not to men." Thus can we transform our dull office, or shop, or school, or nursery, or kitchen into a Palace of the King, luxuriating in His presence, and so beguile the tediousness of the way and work. How this lofty conception of life's mission exalts all its commoner acts. Nothing is little or menial. Everything is great. Every wire touches reports at the throne of God. Every spoken word rings out into the eternities. The soul grows greater with every duty done and every trial met and mastered.

That wonderful picture of Murillo's in the Louvre I studied an hour one bright morning. In it the artist shows the interior of a convent kitchen. Neither nuns nor monks are doing the necessary work, but rather beautiful white-winged angels. One is lifting a pail of water with a happy face; another puts a kettle over the fire to boil; another is at the sideboard reaching after plates with which to set the table; and it is all done so appropriately and with such heavenly grace that you are charmed and taught.

You wonder if so God looks at the every-day duties of our humble and trying sphere. As you look you feel it must be so, and instinctively say: "My every-day life, my drudging tasks are important and necessary, and, if rightly done, are dignified and glorified. I will henceforth put into all my plans and acts the angel aim and the angel grace."

The old artists, by a stroke of the brush, threw the aureola about their saints; we can make our own aureola, not by a single stroke, or wish, or great act, but by repeated touches of truth, and

love, and loyalty in the sphere where we live and toil. Here we get culture, and grace, and power, and high qualification. So have we seen it. Character is made strong and beautiful in the dull drudgery of unrecognized toil and unnoticed service—patience wrought out to perfection; love blossoming with all heavenly fragrance; loyalty such as the angels have in heaven. Culture of highest order comes through disciplin!

How with conscious relish we read the "Beatitudes," as they fell from the Master's lips that day on the mountain side as He spoke to the multitudes. Over and over we have conned them, till they were embedded in memory and became as household words. How oft we have quoted them: "Blessed are the poor in spirit—the mourning—the meek—the hungering soul for righteousness—the merciful—pure in heart," etc., so they run beautifully and blessedly on, delineating the highest types of character known on earth. So oft and glibly quoted, they seem real easy characters to produce. But are they easy growths? Can they be formed by a resolution? Can they be grown in a night like a mushroom?

For a score of years we have been at this self-culture, and are these common beatitude graces ours? Is the fruitage of our lives large, and luscious, and ready for the Master's use? The hardest thing in this life is the realization of our own ideal of a cultured life. We dream of it, long for it, resolve on it, work at it, but the real life has in it so little of beauty and grace we get discouraged. No, the Beatitudes are not easy, but necessary and possible, and possible to us in the very sphere where we toil and think. Remember, there is no failure in our personal Christian work; the only failure is in not doing it. Carlyle said, "Not what I have, but what I do, is my kingdom." The world and all in it is yours, to help you work out the great, deep longings of your being. It was built for your use; use it. Do not attempt great things; you may waste your whole life in waiting for the great opportunity which may never come. Do the little things daily to the glory of God and so win His smile and help. It is harder to plod on in obscurity than to stand in high places within view of all in the field.

God is infinitely painstaking. His registry is perfect.

"A sacred burden is the life ye bear,
Look on it, lift it, bear it solemnly;
Stand up and walk beneath it steadily,
Fail not for sorrow, falter not for sin,
But on—up, till the goal ye win."

Self-Culture.

TEETH OR THEIR SUBSTITUTE IN THE LOWER FORMS OF LIFE.

Prof. C. H. Ward, Rochester.

The propriety of including the varied masticatory mechanisms of invertebrates in an odontological collection can hardly be questioned. If by teeth we understand "certain hard bodies situated in the mouth, or at the beginning of the alimentary canal," as defined by Lucas, then the buccal armament of the higher invertebrates falls within this category, though in none of these animals are they strictly homologous with the teeth of vertebrates.

EVOLUTION OF THE BRAIN.

It is in that heterogeneous group of animals known collectively as worms that these tooth-like organs first appear. Several accompanying details of structure deserve passing mention. The fact that worms were the first multicellular animals to move habitually in one direction explains, as pointed out by Thomson, not only the development of a head, but, since the head end must ever be the first to receive impressions of external objects, sensory organs and nerve ganglia became more developed in this region.

An increase of this cephalization eventually produced the brain of higher types. As the olfactory organs, probably first developed as primitive food inspectors, sharing in this centralization of the sensory apparatus, became located in the front rank of the great nerve sentinels, it followed as a natural sequence that a mouth should be located in their immediate vicinity rather than elsewhere. Thus is explained the apparent anomaly of the existence, side by side, of the most material and the most ethereal of the bodily functions. Nereis, a common chetopod worm, has a pair of laterally opening jaws, each armed with a single sharp, horny hook.

EARLIEST CALCIFIED TEETH.

The earliest appearance of calcified teeth is in a group of echinoderms, popularly known as sea urchins. Here we meet with that complicated apparatus, the "Aristotle's lantern." It consists essentially of five jaws, each armed with a single socketed tooth, and is moved by an elaborate muscular system. This guards the oral aperture and serves to comminute morsels too large to be swallowed whole. The jaws close somewhat after the manner of a drill chuck, all the teeth moving concentrically; be-

sides this, the whole apparatus may be protracted or retracted at will.

The habitual posture of the typical sea urchin, mouth downward and anus uppermost, will doubtless strike the student of vertebrate morphology as anomalous.

ALIMENTARY ORGANS OF ARTHROPODA.

Among the Arthropoda (invertebrates with jointed appendages) the crustacea offer interesting peculiarities of structure. In the crayfish or lobster, for example, mastication is accomplished in part by the hard, laterally moving mandibles, assisted by numerous modified feet, to be completed by the "gastric mill" located in the cardiac region of the stomach. During the annual molt, not only the external carapace, now grown too small, but the entire stomach lining, ossicles and all, is cast off.

Obviously, there can be no edentulous senility in a creature yearly endowed with a complete new denture.

Of the myriapoda, those many-legged, worm-like forms, the poisonous centipedes are armed with toothed cutting mandibles, besides their two poison claws. The similar, but harmless, millipedes have mandibles modified for mastication. In no class do we find a greater variety of feeding organs than in insects. All, however, may be included within the masticatory and suctorial types, the one supplied with biting or cutting mandibles, the other frequently bearing, in addition to mandibles of reduced size, some form of lance-like appendage, together with a flexible, tubular proboscis, as in the common house fly. The dragon fly, or Devil's darning needle of our boyhood, has the well-developed mandibles of the masticatory type. Surely, if any insect deserves well of mankind, it is this burnished knight, whose favorite food is mosquitoes.

In those insects which include a complete metamorphosis in their life history, the larval form is characterized by masticatory organs of exceptional size and vigor, which may be much reduced, or even entirely modified in character, in the imago. Thus, the larval butterfly, who has been observed to eat many times his own weight of vegetable food in a single day, has cutting jaws of adequate proportions, while the adult is suctorial in habit. Indeed, among many insects, as the May fly, or the butterfly of the silk worm, the adult has undergone an atrophy of the digestive tube, contemporaneously with development of the reproductive organs. Having wholly ceased to feed, their subse-

quently brief maturity is devoted to love, to the generation of progeny on which their parental eyes can never rest.

Of the arachnoidea, all scorpions and spiders are suctorial feeders, though in both the prey is grasped by *falces*,—i. e., jointed mouth parts,—which in spiders contain poison glands. In mites and ticks the mouth parts may be modified either for biting and comminuting, or for piercing and sucking. Finally, that solitary survivor of a most ancient family of arachnoids, the king crab (*Limulus polyphemus*), which is not a crab at all, wears his mouth between his five pairs of legs, the bases of which are toothed and assist in prehension and mastication.

TEETH OF MOLLUSCA.

Of the three principal classes of mollusca, two exhibit considerable variety of dentition, while the lamellibranches, or bivalves, at once the lowliest and the least motil of the group, are devoid of hard mouth parts. These headless forms ingest microscopic plants and animals and organic *débris*, which are swept into the mouth by the lashing cilia or throbbing gills. They are seemingly devoid of any power of selection, ingesting indifferently such nutritious or innutritious particles as may come their way.

Cosmos.

For years, in my dental practice, I used to leave the cleaning of the teeth till I had filled all cavities; and then perhaps spend a half hour removing tartar, stains and debris, and charged nothing. In the later years I made a thorough cleaning the first operation, and charged according to the time it occupied. If the teeth were filthy, I took a new brush, and giving my patient a delicate lecture on keeping the teeth clean, asked that the brush be used before further work was done on the teeth. I gave that brush to my patient with my compliments. If dentist thus persisted in not working in foul mouths, and also in thoroughly removing all tartar and stains before filling, it would be much more pleasant for him, and the character of the work to be done would be much more apparent.

DEATH OF A FAMOUS DENTIST.

Dr. Thos. W. Evans, M.D., D.D.S., whose death is announced from Paris, was one of the most widely known of European dentists, although by birth an American. He settled in Paris late in the forties; first, as the assistant of Dr. Brewster, he became known as a good dental operator, and under the reign

of the second Napoleon he acquired what was perhaps one of the largest and most lucrative practices in the world. His 4,000,000 francs, however, which he left behind, were not all made in dentistry. Although much of it accrued from political or diplomatic work, it was well earned, and his open-handedness was well known where dentistry was to be benefited. His French dental contemporaries, however, complain that he gave neither financial nor moral support to the cause of dental progress in the republic. After the fall of the Napoleonic dynasty, he had not the same relish for things French, and we believe that his antipathy for French dentistry was political. The old *régime* had been so good to him that the new order, with all its progress, seemed hateful to him. We are bound to admit that Dr. Evans was a most generous man, and when occasions demanded it, he spent much time and more money to further what he believed would advance dental interests, and what the dental professions of the world have since acknowledged has been to their advantage. It is true, his ways were not orthodox; the personal predominated too largely.

Nevertheless, the name of Evans must always be gratefully associated with two of the most important events in dentistry, the introduction of dental rubber into Europe and of nitrous oxid into Great Britain.

He was one of the earliest of those shrewd investigators who applied "vulcanized caoutchouc" successfully to dental prosthesis. And although his claim to have been the first may not be valid, in his pamphlet "On the discovery of vulcanized caoutchouc and the priority of its application to dental purposes" (Paris, 1867), Evans shows conclusively by sworn evidence of the widow Morey, whose husband took out a patent in 1852 for applying rubber to dentures, "that he had often discussed the subject of his application of rubber to dentures with Morey." In this pamphlet there is also a letter from the late Parson Shaw, of Manchester, who states that he wrote to C. Ash & Sons, who say "they understand you (Evans) made a piece of hard rubber as early as 1852." Evans at this period worked most disinterestedly to make rubber free to be used like any other commodity for the good of mankind, and by his strenuous advocacy he rescued it from the hands of a few interested persons, who desired to monopolize an article and its use by pretending patent rights.

This period was the most active of his career, in which the qualities for which he was distinguished were at their best—his wonderful capacity for observing the useful in dentistry, and his boldness and readiness in adopting new methods.

Most of the late dentist's property is left to the city of Philadelphia for the purpose of founding a museum, to be entitled the "Dr. Thomas Evans Museum," which is to contain all the personal effects and bric-a-brac collected by the doctor during his lengthy career, labeled and exhibited in glass cases. The city of Philadelphia will also be under an obligation to erect a statue to the late dentist, which is to cost not less than \$200,000, and not more than \$400,000. In the event of the city of Philadelphia refusing the bequest, the property will be divided among the five executors to the will, who are Dr. Crane, a Philadelphia clergyman, two cousins and the deceased's lawyer. The last named, by the way, declares that another will exists, according to the provisions of which the property is divided among the natural heirs. The deceased's surviving brother, Colonel Evans, who is aged 85, has come over from America, and in all probability the will will be disputed.

The Dentist.

TREATMENT OF PROTRUSION OF THE LOWER TEETH.

Dr. J. N. Farrar, New York.

Anterior displacement of the lower jaw resulting from loss of side teeth (thus permitting the two jaws to approach nearer each other than is normal) causing the front lower teeth to slide, scissors like, on the labial surfaces of the upper teeth, may sometimes be corrected by so grinding the front teeth that a part of the ends of these teeth will occlude and gradually slide each other into their proper relations. When the abnormality, however, is caused by disproportion in the alveolar tissue constituting the alveolar ridge, or by two short side teeth causing a difference between the planes of the antagonizing ends of the side and front teeth, the lower are generally so far anterior to the upper that grinding would not often prove beneficial. If the difference between the planes of the arches is too great to correct by grinding, the teeth of the two jaws should be moved in the directions that will cause the best outlines of the face, and then force the proper occlusion by grinding the interfering parts.

For correcting a displaced lower jaw one of the best plans is by the use of gold thimble-crowns, cemented on the side teeth; the heading of the thimbles being so inclined that by occlusion the lower jaw will tend to slide posteriorly.

Where the upper front teeth require to be moved forward and outward it may be done by causing absorption, or by spring-

ing the outer plates of the socket outward till the best possible contour of the upper lip is accomplished. The object of this is not only to place the front upper and lower teeth in better relation to each other, but, if possible, to move anteriorly and make more prominent the bony foundation of the upper part of the sunken upper lip and the sunken ale of the nose. This latter change, moving of the bone, however, cannot always be accomplished without injury to some anterior tooth. This arises from too great strain on the lateral incisors. To form the best outline or contour of both lips it is sometimes best, all things considered, to let the lower lip fall a short distance by moving posteriorly the lower front teeth. When there are no missing side teeth, it is sometimes necessary to extract one tooth on each side to permit the moving of the front teeth posteriorly. Occasionally, however, extraction of one of the incisors (lower) and closing the space thus made by forcing posteriorly the others will suffice for this end. To bring about the highest degree of facial beauty cannot always be done by following strictly the rules laid down by sculpture, where there is abundance of material and opportunity to obtain any effect desired; but the aim should always be to obtain the highest possibilities toward harmony of all the features that the conditions of the case may permit.

Protruding Lower and Receding Upper Teeth Corrected by an Inclined Plane.—To show the value of an inclined plane, a girl of about thirteen years of age is given. Her side teeth, molars, cuspids, and bicuspid were very short, and though the roots were not fully developed, the side teeth had erupted sufficiently to occlude properly. The lower incisors, however, were more than an inch anterior to their proper places and occluded anterior to the upper incisors, the wrong contact causing both the upper and lower teeth to continue to move each other still farther out of place. The lower lip, as a consequence, was, of course, too prominent, and the upper one not sufficiently so.

The patient could by effort draw back the lower jaw so as to permit the edges of the upper and lower incisors to occlude, but could not drag it sufficiently back to enable the lower incisors to occlude posterior to the upper ones.

All that was necessary to give the short side teeth an opportunity to further erupt, and at the same time force the lower incisors backward and the upper ones forward, was to wear an inclined plane on the lower teeth. This plane was beveled to such an acute angle that all the incisors, upper and lower, moved at the same time oppositely.

Dental News.

DEVELOPMENT OF THE TEETH.

M. G. Jennison, M.D.

The development of the temporary teeth begins about the seventh week of embryonic life. "Along the edge of the gum, corresponding in position to that of the future jaws, the epithelium is of some thickness, and an involution of the epithelium into the subjacent connective tissue has taken place. Owing to this involution a narrow furrow or groove in the connective tissue is produced, which constitutes the dental groove of Goodsir."

At the bottom of this groove the dental papille are produced, being formed by an increased development and growth of the corpuscles of the subjacent connective tissue. "As a papilla increases in breadth and length the groove widens and deepens, and the involuted epithelium, increasing in quantity, expands over the apex and sides of the papilla, so as to form a hood-like covering or cap for it. The cap of epithelium constitutes the enamel organ," while the papilla becomes the formative organ for the dentine and permanent pulp. After a time this tooth germ becomes inclosed in a sac, and though soft, acquires its characteristic shape, then it begins to harden and exhibit typical tooth structure. After the calcification of the enamel cap is completed this portion of the tooth can undergo no further change in shape or size.

While the crown of the tooth has been developing ossification of the jaws has been taking place, and the tooth has become lodged in its future socket in the jaw. The process of erupting, or cutting the teeth, as it is commonly called, is due to the development of the root, which as it elongates carries the crown of the root into its proper position for mastication.

The membranes or gum over the crown are not always absorbed and pushed aside as readily as they should be, in which case they hold the developing root in contact with the large and sensitive pulp, the result being the various disorders of childhood due to dentition. A proper incision over the tooth will usually allow it to erupt without further trouble.

The series of papille for the temporary teeth are not formed simultaneously. Goodsir gives their appearance as follows: anterior molar about the seventh week, then the cuspid, the two incisors and the posterior molar, the latter being about the tenth week. The papille of the upper jaw precede the lower to a slight degree. The eruption of the temporary teeth does not usually begin till about the sixth month of extra-uterine life, and is completed about the second year.

"Prior to the period when the lips of the primitive dental groove meet, to produce the saccular stage of dentition of the several temporary teeth, an indentation, or furrow, takes place in the connective tissue adjoining the string of epithelial cells which form the neck of the enamel organ. This furrow constitutes what Goodsir termed the 'cavity of reserve,' and it is filled up by epithelial cells continuous with the epithelium of the neck of the enamel organ. As a 'cavity of reserve' is formed immediately behind (i. e., on the lingual side of) each milk tooth; these are ten in number, in each jaw, and, except that for the anterior molar, are formed successively from before, backward.

"The cavities of reserve become elongated and widened, and pass above the temporary teeth in the upper jaw, and below those in the lower jaw. At the bottom of each a dental papilla forms, the apex of which indentates and becomes covered by the epithelium contained in the organ for the permanent tooth. The cavity becomes completely closed by the growth of the surrounding connective tissue, and the sac of the embryo permanent tooth is formed."

From heredity or other causes one or more of the germs of the permanent teeth may fail to appear. At other times extra teeth, called supernumeraries, are formed. These two conditions nearly always occur anterior to the molars. "The three permanent molars, on each side, lie behind the temporary teeth. Their mode of origin is similar to that of the temporary teeth." The germ of the first permanent molar appears about the sixteenth week of embryo life; that of the second permanent molar not until about the seventh month after birth, while that of the wisdom tooth is not formed until about the sixth year.

The third molar, or wisdom tooth, is the only one of the permanent set that is liable to cause trouble in erupting. In some cases, owing to the lack of proper development of the jaw, there is no space left for it, and as nature attempts to force it into position the trouble is sometimes quite serious. Thus, when dentition is complete, there will be sixteen teeth in each jaw, which are admirably adapted for the mastication of food, beginning with the four incisors, meaning cutters, which cut the food as it enters the mouth.

Popular Science.

Ladies used a few drops of milk and a soft rag to remove traces of dirt from their faces in the Middle Ages. To wash in water was regarded as injurious.

CURING CONGENITAL BLINDNESS.

An interesting case of optical surgery is afforded by a recent operation performed by Dr. Duclot, a well-known oculist. Julie Duplessis, a girl 20 years old, had been blind from birth because of a congenital double cataract. She could distinguish light from darkness, but that was all. At the same time she had an extraordinary sense of touch, even for a blind person, and could describe minutely anything she was permitted to run her hands over. The operation took place two weeks ago, and, although she has sight, she is unable so far to make complete use of it. And that is the singular part of it.

For an hour after the operation she could see nothing, but after that objects became visible to her, and caused her exquisite pain. She said she felt as if they were hitting her eyes. She suffered severely from headache, and for the two or three ensuing days she was obliged to keep her eyes closed, opening them only at intervals. For a week all objects were very much blurred, but gradually they became distincter, and she could describe them from sight almost as well as she could from touch.

Later an experiment was made with her in the naming of various objects. Depending only upon sight, she mistook a cat for a dog, a pencil for a key, and a feather duster for a bunch of chrysanthemums. Then one of the doctors held a canary upon his forefinger, and she was totally unable to tell what it was. He put the bird in a cage, and instantly she said it was a bird, though, of course, she did not know what kind of a bird. Finally, they blindfolded the girl and permitted her to touch all the objects she had misnamed. She designated them without an error.

Another curious point is that she seems to have no idea of distance. One of the doctors held his hand close to her face and told her to take hold of it. She reached out for it as if it were several feet away. Conversely, she tried to grasp a bottle that was placed upon a table at the other side of the room, thinking it was within reach. While blind she had no difficulty in walking, her movements being similar to those of any person with sight. Now she steps out as if walking upstairs. She says the floor looks very steep to her, and she always feels as if she were going up hill.

Colors she could not comprehend. Some of them, bright red for instance, pain her eyes very much. It is curious, too, that color seems to cause her more surprise than form. In touching

things she was always able to get some idea of what shape they were; and she could also distinguish the difference between substances. But color is entirely beyond her.

It is said that several months must elapse before the muscles of the girl's eyes will be trained even beyond the rudimentary stage. Never having had sight, she must begin just as if she were a baby, observing things and learning to know them without the aid of touch.—*Sum.*

CANCEROUS GROWTHS.

Dr. Truman W. Brophy.

I had not the opportunity of examining the patient that Dr Dennis has so kindly brought before the Society. I came in just as the patient was going away. This subject, however, is one that will always be of interest to the dentist because, as Dr. Black has said, these tumors are of such frequent occurrence within the oral cavity. The presence of carcinoma within the mouth is very apt to be overlooked by the average practitioner of dentistry. The reason why we have these growths developing so frequently within the mouth is that the membranes, the tissues generally of the oral cavity are most subject to irritation. The diseases of the teeth themselves, the breaking down of tooth structure, the ragged, broken sharp edges of the teeth that come in contact with the mucous membrane of the cheeks, of the lips, and of the tongue; the presence of irritants in the form of tobacco, are the exciting causes of carcinomatous growths within the mouth. We have not anywhere else in the human subject a part of the body so liable to be injured as the mouth.

It is possible that some of the gentlemen here may not know that the disease which terminated the life of General Grant was of dental origin. General Grant was a patient of Dr. Frank Abbott, of New York, and it was from Dr. Abbott's lips I learned the story, more fully and accurately than was ever published, of that distinguished soldier's last sickness. He was a man who had no fear of pain, who had passed through many battles, and had been subjected to the injuries and hardships of campaigns. He paid no attention to the slight irritation at the base of the tongue, caused by a broken molar tooth. He continued to smoke; the tooth continued to irritate the parts, lacerating the surface, and by and by the tissue began to develop new cancer cells, and almost simultaneously with the development of new

cells was a breaking down and a development of a characteristic epithelial growth. The diseased process began to extend down into the pharynx, involved the lymphatic glands, and when it reached a point that made it almost impossible for him to tolerate the pain he applied for relief, but it was too late.

Some of these growths are benign at their inception, and had this case been properly treated, I have no doubt that the great soldier would have lived many years longer than he did.

Another case of a distinguished man that attracted the attention of not only the medical, but I may say the reading world, was that of the Crown Prince of Germany, afterward, for a brief period of one month, the Emperor of Germany. Had Frederick received the attention from a dental standpoint that he required he might be living to-day and be Emperor of Germany. But he neglected to give the attention which was his duty to give to the dental organs. In case there was a breaking down of the teeth, the formation of pericementitis and alveolar abscess and irritation, followed by fistulous openings, the development of a growth on the surface of the membrane almost precisely like that of General Grant's, and which terminated his life. These cases impress on us the importance of extreme care from a hygienic and dental standpoint in the way of dental manipulations, in the care of the teeth and of the mouth. These tumors of the oral cavity are constantly before us. Those of us who do something in this particular line of work perhaps come more frequently in contact with them than many who do not do this work; and yet I am satisfied that every practitioner of dentistry sometimes sees three or four cases within a month without making any special note of them, and neither the dentist nor medical attendant recognizes them. They fail to recognize the disease till it becomes a source of discomfort, and then the patient applies for treatment.

Many years ago it was my pleasure to listen to a series of lectures by a surgeon who stood high in the medical world, a man whose reputation perhaps was not excelled by that of any other man in the West. I refer to the late Professor Moses Gunn, Professor of Surgery for many years in Rush Medical College. His professional life largely antedated the beginning of a knowledge of bacteriology, or the study of germs and their influence in the establishment of disease. Professor Gunn once made the statement that cancer was a disease which would terminate the life of a patient at the end of four years after its development almost invariably, provided the pathological process

was allowed to take its natural course. He even went so far as to make the statement that if he were to diagnosticate a growth which he presumed to be cancerous, in the event of the patient living four years without any surgical attention, he would be willing to admit that he had made an erroneous diagnosis. Views on this subject have changed somewhat in recent years, and we are satisfied now that early operations for the removal of carcinoma are the only safeguards to the preservation of life.

Much has been said and done in the way of suggestions about the treatment of such conditions by the use of medicinal remedies. I would like to place myself on record as saying that the treatment of carcinoma with plasters composed of arsenic, chlorid of zinc, and various other substances is not to be commended. It is not only dangerous, but it is very trying to the patient. I think it does more to reduce the vitality of the patient than a surgical operation of immediately and promptly removing the disease by the knife. I would not advise one to operate too soon or to reach conclusions without a careful study of each case, but so much harm is done in the way of deception on part of certain people who claim to be able to cure these conditions by the use of drugs, and naturally we ought all of us to hesitate to undergo a surgical operation if it can be avoided and resort to medication. But still I want to be very emphatic in stating that the remedies employed for the removal of these growths are most objectionable as a rule. Possibly cancer might be removed sometimes with the actual cautery. I think the actual cautery would destroy all of the diseased tissue in the beginning, provided it is not very extensive. A small patch on the mucous surface, at the inception of the growth, might be eradicated by the use of the cautery, still I would prefer to enucleate it with the knife, removing all of the tissue involved in the pathological process. Whenever a patient is inclined to accept statements made by his friends and others, advising him to have certain things done with medicines, and not undergo a surgical operation, we almost always find that there is a complication even worse than that which previously existed, and in order to have the parts restored to health an operation must be performed. Too frequently patients place reliance on medication and allow the condition to go on till surgical interference is of no avail.

Review.

The largest telegraph office in the world is in the General Post-office building, London. There are over 3,000 operators.

CARCINOMA OR CANCER OF THE BUCCAL MUCOUS MEMBRANE.

Dr. G. V. Black.

The difficulty is in the early recognition of this disease. It occurs as a little roughened sore, not very bad, not painful especially, a pimple that goes on for weeks perhaps. According to the history this patient did not notice this trouble till three and a-half months before the operation. The probability is that it was in existence for nearer three years and a-half; though it may not have been of shorter duration, yet it must have passed unnoticed by the patient for a considerable time. If we could get these cases in the early stage, our patient would be comparatively safe. For one who has not been regularly occupied with tumor work, I have had a very wide experience with these growths. Twenty-five years ago Dr. Prince, of Jacksonville, was doing a large amount of tumor work, and in connection with him I followed this class of tumors particularly. I followed this class of tumors as they appeared about the mouth carefully from their inception as nearly as we could get them through the operations and return, and re-operating and re-return of the disease. Some of them were cures, others were not, so that I had the opportunity of following many of these cases till the death of the patients. In this way I have come to appreciate very keenly the importance of early diagnosis of carcinoma, and the importance it is to humanity that dentists should be able to point out the danger that threatens their patients. Carcinoma commences as a little roughened sore that refuses to heal; there is a little bit of induration, a little warty appearance about the mucous membrane of the mouth, about the lip. Mind you, of all cancers that occur in and about the human body more than one-half occur about the mouth. I have followed this disease in almost every position in the body. I have seen it on the extremities, on the wrists, on the hands, the breast, the stomach, and in one case the kidney. It was probably metastatic in the latter case, because there was cancer of the intestines. I have seen cancer involve the uterus, the rectum and other organs. But the greater number of cancers occur about the mouth. In the last operation for this disease in which I assisted my son, he removed one-half of the lower jaw. The operation in many respects was similar to the one detailed this evening, except that it was much more extensive. The lower jaw was removed from

the joint to the center of the chin, together with half of the floor of the mouth, making it an ugly operation on account of liability to strangulation by the dropping of the head of the trachea. This had been a neglected one, in which suppuration had taken place through the cheek, discharging on the outside. It was not expected that the patient would receive more than temporary relief; but the old gentleman is still alive and will not die young, for he was eighty-eight years of age when the operation was made. But the last I heard from him was that another sore had occurred close to the ear, showing that recurrence had taken place. Recurrence is very much more frequent when the tumor is situated on movable parts. The motion of the tissue involved seems to have an influence in spreading the elements of the cancerous affection.

Another very peculiar phase of this disease is that the epithelial layers, so to speak, of the cancer sometimes disturb and displace each other, making a condition in which recurrence is liable to take place on account of the opportunity given for the spreading of disturbed cells by floating away with the lymph streams. I remember a peculiar instance of that kind, operated on some twenty years ago by Dr. Prince. I made sections of the growth, studied the case, and found this condition. Meeting Dr. Prince a few days later, I inquired about the condition of the patient. I said to him, "Doctor, you need to keep close watch of that case, for I think the disease will recur." The tumor was situated on the face, near the eye, not on a movable part. Dr. Prince said to me, "I think it is one of the safest operations I have made." But it was not more than three months when he telephoned me, asking me to come to his office, and I found the patient there with a recurrence of the tumor. It was only then he asked me how I had come to the conclusion that that particular tumor was liable to recur, and I said it was on account of one portion of the growth breaking up another portion of the cancerous tumor.

I have removed these tumors from the lips and other portions of the body. I have removed them from the cheek, etc., cutting wide, and I have witnessed the removal of carcinoma when the case was taken early, and the patients have gone on and done very well with as perfect immunity as if they had never had cancer. This fact should encourage us in our watchfulness for these tumors, to make an early diagnosis of this condition which we are liable to see early in its history. *Review.*

CAST FILLINGS AND BRIDGE ABUTMENTS

Dr. C. L. Alexander, Charlotte, N. C.

Cast metal fillings afford a method of restoring teeth that are too badly broken down by caries to be amenable to the usual methods of filling, and which are made with much greater ease to both operator and patient than the gold contour work which they may often be made to replace most advantageously. They also permit of saving labial walls of enamel which would be sacrificed in the usual methods of crowning. Cast abutments for bridge-work can be utilized for badly reclining molars avoiding the necessity of devitalizing living teeth or of mutilating the teeth to ream parallel walls as required for telescoping crowns.

By Dr. Alexander's method, platinum plate or foil, which has been rolled very thin between copper plates to destroy its elasticity, is burnished accurately to the surface of the prepared cavity, holes being drilled for retaining posts, which are subsequently soldered to the matrix with pure gold. The filling is then contoured in wax and an articulation secured by allowing the patient to bite into it. It is then removed from the mouth and properly trimmed, pure gold is burnished over the entire surface with the exception of a suitable opening through which the wax is boiled out, 20 or 22k. gold solder is then fused into the matrix thus formed and the filling secured in position with cement.

Ohio Journal.

BLEACHING TEETH.

Dr. A. W. Harlan, Chicago.

The bleaching of the teeth out of the mouth by electricity is one of the accomplished facts. Teeth thus bleached remain so, but if you surrounded them with the same conditions that we had in the mouth they would rediscolor. If I had any theory to offer with reference to the removal of discoloration from teeth, it would be that to bleach the tooth you must render the coloring matters soluble, and wash the coloring matters out and then the tooth is bleached, and that is not always accomplished even with the liberation of the oxygen. The sulphur dioxid, the sulphurous acid process, theoretically furnishes one of the best processes for rendering coloring matter soluble, but in practice it does not work so well. There are many methods of bleaching fabrics, feathers, bone, etc., that are not applicable to the teeth. When we have a badly discolored tooth with fractured enamel on the

labial surface, it would probably be better to cut it off and put on a crown than to bleach it; though we may succeed in bleaching it, we may not be able to keep it bleached. I think one of the faulty things in operating on discolored teeth is that we do not protect the interior of the tooth with any cementing or coating solution, and protect the crown of the tooth for a sufficient length of time after that has been placed in, to render it watertight, theoretically speaking. Out of the mouth I have been able to line the inside of the teeth with melted clear liquid paraffin, and then protect the outside, keep it dry for a few hours and afterward drop it in saliva that has been collected and it does not seem to rediscolor, but probably saliva itself does not contain the fermentable particles necessary to rediscolor it from the outside. If this method of bleaching attains any degree of certainty, some process of lining the interior of the tooth, which will make it absolutely impermeable, is the next thing that has to be done in order to keep it in that condition. *Review.*

PORCELAIN INLAY.

One of the great difficulties in the success of an inlay is encountered in matching the color, particularly when it is extensive, covering half or three-fourths of the width of the tooth. When a rod or piece of porcelain has been selected, which seems exactly the shade, after being fitted it will very often be found to be more imperfect in color than it promised.

Another complication often arises from the fact that the tooth structure around the cavity is not one color, sometimes darker near the gingival border, either on account of the shadow of the gums or discolored dentin, and occasionally, broken down near the approximal surface, there may be a shadow of a filling which would affect the color of the tooth.

The lack of uniformity in color might not disfigure a natural tooth so much, but when an inlay is put in, the effect becomes more pronounced. All who have tried inlaying will quickly recognize this fact.

When an inlay is too light, which is generally the case, it can be shaded darker by coloring the bottom or reverse side. These inlays are not exactly transparent, but generally are thin enough to make it possible to modify the color in the manner described.

After the inlay has been fitted and ground so as to be nearly as thin as it must be, after the final polish, try it in, and any defects in the color may be corrected or modified by coloring the bottom or reverse side with water-colors or some suitable coloring matter. As soon as it becomes dry, try it in again, and if not correct modify it till the exact shade is obtained.

It frequently occurs that to get a good effect one part of the inlay must be a shade darker or lighter than the other.

V. E. T., in Dental Weekly.

EROSION.

Dr. J. N. Crouse, Chicago.

I examined a mouth two or three times within a week where the front teeth above and below were worn down about one-third of their length on the grinding surface; where the patient chewing would polish the surface of the hardest gold filling in a week so that it would look as if done intentionally. The teeth were not filled, but the ends were black and all the dentin seemed to be black. Now it occurred to me as I was working, that the microbe would have a pretty lively time under that fellow's teeth, yet the tooth substance was so decayed and affected that I could readily shave this black portion out with an excavator. Of course the dentin had no sensation in it, but it had substance enough that the ordinary chewing did not cut the black portion much faster than the enamel, and yet there was some kind of destruction of the tooth structure there, independent, I think, of microbes. The question of erosion is one that we do not know anything about. The last theory, which seems a plausible one, advanced by some one in Philadelphia recently, holds that it is caused by an inflamed condition of the mucous follicle under the lips in that particular portion. I had some specimens from one mouth in which the erosion, instead of being as it is ordinarily across, grew up and down through the center, and clear up through the pulp cavity. I have seen that patient for twenty years off and on, and this has been progressing gradually to where it is now; the pulp has receded and the grooving out is certainly two-thirds of the tooth. I have taken impressions of it at two or three different stages of growth.

Then the other question which needs to be solved or explained away—it has been explained but not satisfactorily—is why tooth destruction goes on so much more rapidly in one mouth than in another.

Review.

THE USE OF TEMPERED AIR AND CHLOROFORM FOR HYPERSENSITIVE CAVITIES.

All treatment must have for its object, exclusion of acids and other agencies of irritation found in the mouth.

The destruction of bacteria and the neutralization of their acid eliminations.

The employment of that which will retard or entirely stop the atomic movement of the protoplasm, yet not entirely destroy it.

This can be accomplished with dry air, at a temperature of 90 degrees or 98 degrees, after bathing with chloroform, applying it after the tooth has been isolated with the rubber-dam, before any cutting is done within the cavity of decay. The air is applied continuously, till absolute dryness of the dentin is accomplished.

This done thoroughly (and at times it is difficult) there is little suffering on the part of the patient, from sensitive dentin, and the operator has the satisfaction of feeling that he has not deprived the tooth of any of its already low vitality, he has not subjected the pulp to any undue excitement, but has left the odontoblasts in a condition to resume their functions of depositing salts in the dentinal matrix.

All this has been accomplished by simply depriving the protoplasm of water, the main factor of molecular motion.

H. C. Thompson, in Dental News.

BRIDGE-WORK WITHOUT CROWNS.

I have been troubled, as I suppose all of you have, where, by the loss of some of the bicuspid or molars on either side of the lower jaw, the anterior teeth wear away the upper incisors on their palatal surfaces. Many times we find the pulps of the upper incisors encroached on by this wear. I have adopted a method which has given me much satisfaction. The bicuspid and molars are built up sufficiently to open the bite by pieces of pure gold burnished on the grinding surfaces, with two or three pins fitting into holes drilled into the teeth, and the occlusion made correct by pieces of plate and solder melted on. Dummy crowns are then fitted between the teeth which have been tipped and soldered to the tips, making a continuous bridge. The tips are then set with cement. The palatal surfaces of the incisors may then be restored.

Dr. Draper, International.

CLEANLINESS.

Dr. Metcalf.

The first thing on the part of a dentist is cleanliness. It is one of the most essential things a dentist has to attend to, not only in regard to himself personally, not only to wash his hands somewhere outside, but to wash his hands in a place near enough, for the next patient to know of it. The next thing necessary is clean napkins. I have had many a patient who came to me, not because I was a good dentist, but because they observed I always used a clean napkin. Take a sensitive patient and place a soiled napkin to their mouth, why, it is enough to turn the stomach of a crocodile. A clean mouth is a pretty good thing. I think a dentist ought not to indulge in the use of tobacco in any form, or in anything that will give an unpleasant odor to the breath, especially during office hours. And as to those stronger beverages, leave them to us older ones, like Dr. Field, Dr. Taft and myself, but they are a nuisance to any one. Another essential to every practitioner is that of courtesy. I don't know of anything that does so much good as courtesy.

These little things I have mentioned will not only insure a good practice, but there goes with it a good reputation, and with economy a sure competency to every dentist. *Register.*

MICROÖRGANISMS.

Dr. G. W. Cook, Chicago.

In speaking of the attacks of microörganisms on tooth structure in different mouths, I think we might say that it is caused by the culture media in which these microörganisms grow. In some mouths you find microörganisms in great abundance and very prolific and growing very luxuriously; in other mouths they do not grow, and their toxic substance that they throw off has been proven to be due to their culture media in which they grow.

In typhoid there are many cases in which the typhoid bacilli pass over the intestinal tract without disturbing the functional organs of the body in any way, and in other cases it does attack and destroy the vitality of the membrane, and it is so I think in the mouth. The time is not far distant when perhaps we will be able to cultivate all microörganisms in the mouth and determine their action and their effects. There are some microbes, those

that are destructive that are causing dental caries, which will not grow on the present culture media that is now in use, and the thing that is to be done is to produce these artificially and find out what their destructive properties are. It is a question of considerable speculation in regard to whether the microorganism attaches itself to the teeth and produces a substance that destroys the enamel rod or the cement substance, or whether it is caused by an acid formed, and the microorganism afterward attaches itself. I have been doing some work in that line, and I am very much inclined to believe that the destruction of teeth is caused by an acid that comes from decomposition.

Review.

ABSCESSSES.

Dr. T. M. Jamison.

An abscess, as commonly understood, is a sac or continuity containing pus, situated at the end of a root, with a dead pulp. In nearly all cases of abscess of long standing, necrosis occurs, and it is then that we have what we term chronic abscess, with fistulous opening. It is this phase of the subject that I desire to discuss.

In the first place, we must presume that the pulp-canal has been permanently filled, as this is the most important step in a permanent cure. As the fistulous opening does not always occur directly over the seat of the disease, the abscess can be located with a small probe or canal plunger. It is necessary to dissect away the gum over the diseased bone, and with a round bur cut away all affected alveola, and, if possible to reach the abscess, cut away a small portion of the apical end of the root. Wash the cavity thoroughly with warm water, so as to remove all *débris*. Inject peroxid hydrogen liberally, *i. e.*, until all signs of the presence of pus have disappeared, and pack the cavity with iodoform gauze.

I find iodoform very unpleasant for most patients, and by the addition of two drops of the oil of cloves mixt with vaselin I am able to render the iodoform nearly odorless, and possibly add to the antiseptic properties of the treatment. I have treated a number of cases by the use of Marchand's glyconone, instead of iodoform, and can report satisfactory results—the glycozone being entirely pleasant for the patient.

This treatment should be repeated every twenty-four hours till the pus cavity seems clean. This can be determined by the injections of peroxid hydrogen, as there will be slight effervescence when injected into the cavity, when a final dressing can be left in the cavity, and it will heal without further treatment.

The Dentist.

LAUGHTER AND INSANITY.—“It is a curious fact,” said a physician recently who was a specialist in nervous diseases, “that, taken as a general rule, all lunatics laugh about twice as much as sane people.

“One of my worst patients at the present moment exhibited the first signs of insanity by laughing continuously and without stopping for over a week.

“It was just after a severe illness, which had been accompanied by much mental depression; and his friends were so delighted with the apparent improvement in his spirits that they had no idea of the real state of affairs until a doctor was called in and pronounced the man completely mad.

“Laughter after a surgical operation is a symptom dreaded by doctors and nurses.

“That queer impulse to laugh which some people experience in the first moment of a sudden calamity is in reality one of the sharpest warnings of insanity that any one could receive.

“Some people fall into a habit of laughing at their own thoughts when alone; this should be always strictly checked, as it is an unhealthy sign, and may lead to brain trouble later on.”

Family Doctor.

DIAMOND DRILLS, HOW TO USE.—A writer in *Ash's Quarterly* says: “In using a diamond drill for making cavities in artificial teeth, it is important that the point should be dipped in sweet oil or water, and placed on the work before the engine is started. The engine should be stopped as often as the drill shows signs of becoming dry, and each time after it has been dipped in the lubricant it must again be placed on the work before the engine is started. It is, perhaps, needless to add that the hand-piece must be held firmly and steadily in position to insure success and to avoid breaking the drill.”

AMALGAM OR GOLD?

Dr. G. W. Schwartz.

Considering the manner in which we ordinarily manipulate gold and amalgam, I believe if every dentist were to fill—say twenty teeth—one with amalgam and one with gold alternately, it would be found at the end of five years that the amalgam fillings would be in better condition than the gold ones. Taking all the cases as they come to us—good, bad and indifferent—I believe in the hands of the average dentist amalgam would be the best filling material relatively under these conditions excepting the six anterior teeth.

Nothing has been said with reference to what is considered the best quality of filling material, whether to preserve the teeth from decay or to restore contour. I believe more teeth would be saved by the use of cements and gutta-percha—that is, they will prevent recurrence of caries of the teeth better than either gold or amalgam.

Dr. Pruyn says he uses a combination of the two metals, amalgam and gold. In putting a filling in a tooth that is very badly broken down, as the tooth needs saving, I believe Dr. Flagg says that we should use amalgam, and that the less it needs saving, we should use gold.

Review.

The new alluminant (acetylene) has now a rival, to which the name of eureka gas has been given. This gas is the invention of Mr. Hector de Fazi, of Montefiascone, Italy. It is said to be obtained as follows: Lime as pure as possible is employed as a base, colophony and calcium carbide being added. One thousand parts of the mixture ready for use consists of 900 of quicklime, 50 of colophony, and 50 of calcium carbide. There is said to be no fear of explosion by mixing with air, no heating of water, and no special burner needed. One thousand parts of the mixture giving 60 liters of gas at a pressure of 35 millimeters of water. The photometric intensity of the flame is stated to be 92.4 candle-hours, and the same amount of calcium carbide employed singly would only give 18 candle-hours. It is claimed that eureka gas is 50 per cent cheaper than acetylene, or that at equal cost it will give half as much more light.

DENTISTRY IN JAPAN.

Seimaro Kubota, Japanese Dentist, Tokio, Japan.

Dentistry in Japan is yet in its infancy, as you will understand when I tell you that about fifteen years ago Japan held no regular dentist, but there were two or three students of medicine who practiced dentistry as a sort of an accommodation to their patients. In 1884 the Imperial Japanese Government established an Examining Board for Dental Practice, which meets twice a year, in April and October, and before which each candidate must present and pass the examination in the following studies: Chemistry, anatomy, physiology, pathology, operative dentistry, materia medica and therapeutics, and clinics. Each candidate must present his certificate indicating a study of at least five years preparatory to the work. One examining board meets at Tokio and another at Kioto. The first dental college in Japan was established in 1887 by Yutaka Kubota, my honored father. It is still in progress, and is called Tokio Shika Senmon Igasko—meaning Tokio Dental School.

Since 1887 two other dental schools have been established in Japan, one in 1890 by Dr. Takayama at Tokio, and one in 1894 by Dr. Kojima at Nagoya City. Tokio has two dental associations.

Ohio Dental Journal.

Mr. Preston, Director of the U. S. Mint, says the *New Orleans Picayune*, has run down the origin of the motto, "In God We Trust," to be found on our coins. It appears the first suggestion of such a motto came probably from W. R. Watkinson, of Ridleyville, Pa., who signed himself a "minister of the Gospel." His letter to Secretary Chase on the subject was dated November 13th, 1861. The mottoes suggested were "Our Country; Our God," and "God Our Trust." In reply the Secretary wrote: "I approve of your mottoes, only suggesting that the first should read 'Our God and Our Country,' and that the motto on the shield should be changed so as to read instead of 'God Our Trust,' 'In God We Trust.'" In accordance with an act passed April 22d, 1864, the motto, "In God We Trust," was placed on the new bronze two-cent piece. By other acts it was provided that it should be placed on certain silver and gold coins. The same act conferred on the Director of the Mint the power to decide on devices for the coins. It also changed the composition of the pieces.

PRACTICAL POINTS.

By Mrs. J. M. Walker, Bay St. Louis, Mississippi.

Persistent Hemorrhage after Tooth Extraction.—Wash the cavity with hot water and insert a plug of cotton filled with the subsulfate of iron, or dust the socket well with the subsulfate and insert a plug of softened gutta-percha pressed firmly down into the socket, ligating it down in such manner as to secure pressure. Instruct the patient to maintain an upright position, thus securing the benefits of gravity. *Truman W. Brophy, Dental Cosmos.*

Dissolved Rubber in Making Partial Plates.—Have two grades of solution—one quite thin, the other of a thick, syrupy consistency. The solvent should be very volatile—as chloroform, naphtha, benzine, etc. Keep in wide-necked, glass-stoppered bottles. Grind the teeth to fit gum accurately and hold in place by plaster of Paris on labial and occluding aspects, pack a small portion of the thick solution around the pins; paint palatal portion of model with the thin solution. Dry and add other coats until the desired thickness is obtained; then trim with sharp knife to size and shape required. Invest and vulcanize—no flask required. Plate may be made as thin as paper and will show rugae clear and distinct. Tin-foil on both sides of the rubber is advisable.

Wm. Louisson, Penn Den. Journal.

Extraction and Replantation as a Cure for Pyorrhea.—When advanced, with no connection between roots of tooth and maxilla, the tooth was extracted, the pulp removed, the tooth sterilized, apex of root amputated, canal filled, socket deepened and tooth replanted. The tooth was subsequently found to be firm and in good condition. Ligate with silk ligatures instead of using mechanical splints. In case of hemorrhage after extraction use sulfo-naphthol and hot water.

R. H. Cool, Pacific Stom. Gazette.

Treatment of Root-Canals with Putrescent Pulp Contents.—Oxidize the contents of the canals with permanganate of potash, inserting a small crystal and waiting for it to decompose the organic matter present. Cleanse carefully, following with aristol and oleum gaultheria when pus is not present. If pyemic conditions exist, precede the aristol with zinc chlorid 5 to 10 grains to 1 dram water, or fomalin 5 per cent solution.

Louis Jack, International Den. Jour.

Pyrozone as a Styptic.—In the bleeding of the gums so troublesome in crown- and bridge-work, a 25 per cent solution pyrozone applied to the gum acts as a styptic, and in my hands has never resulted unhappily. Use in the same manner for the insertion of gold fillings at cervical margins, one or two applications rendering the gum perfectly dry for ten or fifteen minutes.

Dr. Wittlander, Dental Practitioner.

Aconit, Iodin and Chloroform Mixture.—Add iodine crystals to absolute alcohol till a saturate solution is secured. Take of the above, of tincture aconit root and of chloroform, each one part, and mix.

Dental Review.

Mouth-Wash for Fetid Breath.—

R.—Tinct. myrrhe	3 ij
Kennedy's dark pinus—Canadensis	3 i
Sodii borates	grs. xij
Listerin (Lambert's)	3 iij
Aque dist	3 ij

Use as mouth-wash three times daily. *Med. Brief.*

Protection for Slight Wounds—Collodion and balsam of Peru 1-10 gives excellent results; will remain intact for days; washing with soap and warm water does not disturb it.

Trans. B. J. Cigrand, Dental Digest.

Formalin an Ideal Antiseptic and Disinfectant.—With the facts before us, we feel that at last an ideal antiseptic and disinfectant has been found, in the use of formalin in place of heat, steam, carbolic acid, and bichlorid of mercury, in all places where complete disinfection is desired.

Carroll O. Southard, Sou. Pacific Med. Jour.

Sozoiodole.—Prophylactic in threatened periostitis and gingivitis. Apply to the gum directly over the root of the affected tooth. Apply at night on cotton tampon; through the day apply by means of moistened finger tip.

Dr. Buckeisen, Pacific Stom. Gazet.

Hydronaphthol in Root-Canal Treatment.—In the treatment of a putrescent pulp canal use hydronaphthol-alcoholic solution 25 per cent. The penetrating property of the alcohol and its affinity for moisture carry it, laden with the hydronaphthol in solution, to the remotest nook and corner of the pulp-chambers and canals, however small, even to the apex and through the soft tissues, as well as into the tubuli. The alcohol evaporates, leaving the hydronaphthol to do its useful work of disinfection. It is powerful as a lion, cunning as a serpent and harmless as a dove.

S. S. Stowell, in Dental Cosmos.

Crowning Badly Decayed Roots.—Secure anchorage in the root by means of a screw post ; build amalgam around it and restore the shape of the root. When hard, polish and then fit the band as usual.

Dr. Cooke, International.

Cutting Down Gold Work.—The wire brush-wheel made for jewelers is a time-saver in cutting down and polishing crowns and bridge pieces and other metal work. It cuts rapidly. Can be procured at any jewelers' supply house.

L. P. Bechtel, Ohio Journal.

A copper carpet tack wrapped with annealed gold foil makes a very good pivot to which a flat-back plate tooth may be soldered with 18k. gold solder.

B. H. Teague, Dental Weekly.

The ideal bridge must have a narrow saddle, which is hygienically correct, and parallel piers, as the only form permitting of perfect adaptation and occlusion.

F. F. Fletcher, Digest.

To Prevent Recurrence of Decay.—When the cavity is ready for the filling apply formalin (forty per cent) for five minutes. Then dry and coat with varnish of Canada balsam containing two per cent of formalin. Then fill as usual.

A. C. Hart, Items of Interest.

Durable Cement Filling.—Burnish the enamel powder into the surface of the filling before it is perfectly hard. This prolongs its insolubility.

Med. Brief.

Cr  de Silver Salts.—Lactate of silver immediately destroys all bacterial life in putrescent pulps, and puts the canals of dead teeth into perfectly antiseptic condition. I use it in canals in powder ; for injections, in solution.

Chas. A. Nash, Items of Interest.

An Emergency Crown.—The old style pivot tooth can be quickly placed in position and made remarkably secure by using cement in the crown and root, observing the precaution to keep the wood perfectly dry in order to insure union with the

Den. Weekly.

Tempering Steel.—From comparative trials it has been found that steel tempered in phenol has much greater hardness and elasticity than when tempered in water.

Moses Levat, Science News.

Pulp Devitalization in Deciduous Teeth.— I have used with much success a paste of powdered cantharides and carbolic acid—say about one-twentieth grain of the powder with enough carbolic acid or creosote to make a paste.

Dr. Darby, International D. Journal.

Painful Eruption of Wisdom Teeth.—Dip a small piece of cotton-wool in melted crystals of carbolic acid and a little cocain and pack between the erupting tooth and the gum, also touching the surface of the gum with it. Better than lancing the gum, which leaves a tough cicatrix; or than excising the gum, which is very painful.

A. T. Coucher, Jour. Brit. Assn.

Benefits of Cavity Lining with Cement.—(1) It retains the filling; (2) it preserves the color of the tooth; (3) it prevents the metal from transmitting sensations of heat and cold to the pulp; (4) by its use we save valuable tooth structure, as there is less cutting for anchorage; (5) if caries should occur in any part of the tooth near the filling, it progresses less rapidly than if no cement had been used.

Jas. M. Magee, Items of Interest.

Setting Logan Crowns.—Gilbert's antiseptic balsam varnish applied to a Logan crown, and also to the stump of the root before setting the crown, greatly assists in its retention.

H. B. Hinman, Ohio Journal.

To Check Excessive Perspiration of Hands.

R. Tannoform.....	1 part.
Powdered orris root.....	1 part.
Talcum.....	6 parts.

Tannoform is a combination of tannic acid and formaldehyde.

Pacific Gazette.

Cement and Amalgam Filling.—Place cement in the cavity, press a little amalgam in it and wait until the mass hardens. Then complete the filling with amalgam.

Dr. Geo. Elliott, Ohio Den. Journal.

Liquid Silex.—Instead of paying a big price for a small bottle of "liquid silex" at the dental depot, get a quart of silicate of soda, which is the same thing, and can be had at any wholesale drug house for forty cents.

J. G. Templeton to Dental Review.

For Neuralgia.—Equal parts of benzoin and peppermint oil, rubbed on the affected part or sprinkled on a cloth wrung out of hot water, acts like a charm in many cases.

Pacific Stom. Gazette.

ITEMS.

Guesswork is not apt to be over-remunerative. *Puck.*

ADVANTAGE OF DEEP BREATHING IN EXTRACTION.—In painful operations in my practice I have found deep and quick inhalation, with local anesthesia, of great benefit.

Luella Cool.

The use of the combination of cement and amalgam has a very valuable place in my practice. The amalgam is mixed just a trifle softer than for an amalgam filling and condensed in chamois or kid skin.

Review.

NERVE CAPPING.—One of the best capping for exposed nerves is oxisulphate of zinc mixed with oil of cassia. Place a small amount over nerve and temporarily fill with gutta-percha or cement in a few weeks. Gold or amalgam can safely be used not removing all the temporary filling.

Dr. Luella Cool, San Francisco.

Pike, salmon and gold fish never sleep, and several other of the fish family that never sleep more than a few minutes during a month. There are dozens of species of flies which never indulge in slumber, and from three to five species of serpents which the naturalists have never yet been able to catch napping.

N. Y. Witness.

Le Gerant and E. Pierre (*Semaine Medecale*) employ the following anesthetic:

Chloroform.....	10 parts.
Ether.....	15 parts.
Menthol.....	1 part.

The anesthesia resulting from this application lasts about five minutes.

Register.

AN OLD CEMENT FILLING.—A few months ago I was called on to refill a tooth for a lady. It was a superior left first molar. This and three others had been filled with cement by Dr. Dobbins, of West Point, twelve years previous. Just one of the four needed my attention. The others were in perfect condition, and the cement was only slightly worn. We often find it true that one good cement filling is worth more than several inferior gold or amalgam fillings.

Henry C. Hopkins, D.D.S., in Ex.

M. Poncin says that a simple method of curing magnetized watches has been recommended by Mr. De Puydt, since he made his first dynamo (over twenty years ago). It consists of hanging the watch to a string, twisting the latter, holding string and watch near a magnet or a dynamo, releasing the watch, and whilst it is revolving, carrying it away (not too abruptly) from the magnet or dynamo. The demagnetization is due to the rapid alterations of the poles of the magnetized parts that are decreasing in force.

H. L. Eamer, in Popular Science.

INCANDESCENT OIL LAMP.—Among recent French inventions is a petroleum lamp said to give a stronger illumination than any now in use. According to the description in *La Nature*, it works well, is economical, and free from danger. The arrangement by which the light is produced and regulated is essentially the same as in the improved kerosene lamps familiar to Americans. The peculiar feature is the attachment thereto of an Auer incandescent muff (mantle), which intensifies the effect in like manner as when electricity is the agent employed. As to practical advantages, it is claimed that in this lamp any grade of petroleum may be used, as it causes neither smoke nor smell.

Trans. for Popular Science News.

VISUAL DEFECTS IN DENTISTS.—The *Cosmos'* article on this subject recalls local trouble and experiments; a few facts alone are necessary without going into a lengthy discussion. Few operators of experience have failed to discover that the reflection of light from the glistening, glittering surfaces, and the effort to see into a shadow through the glare of light are equally to blame with difficult positions for our common visual defects. After wasting time and patience with all sorts of lenses I accidentally discovered that a real crystal lens takes care of the refraction most satisfactorily. As I did not keep my light under a bushel, my friends called for help so much that I had a large number of crystals cut in the way I have found most satisfactory, and have had the pleasure of correcting many cases where "magnifiers" failed. In nearly all cases the crystal gives the eye sufficient rest so that nature takes care of the restoration. All who have not thought out the subject for themselves will find the subject carefully treated in the article mentioned. If I take the trouble to help out acquaintances, it is simply in the missionary spirit. I am not an optician, and I simply send them the lenses unmounted, as I wouldn't know how to put them in the frames even if I wanted too!

La Salle.

A BIG CANNON CASTING.—At the Otis steel works, Cleveland, Ohio, August 4, the casting of a smooth bore gun on the methods suggested by Dr. R. J. Gatling, of Hartford, Conn., inventor of the Gatling gun, was successfully performed. The government thought so well of Dr. Gatling's method that Congress appropriated \$40,000 for the test. The casting weighed thirty tons, and the gun, when completed, will weigh sixteen tons and will carry a 400 pound projectile. *Scientific American.*

HAPPY OLD AGE.—For old age to be a time of happiness it must be accepted and not fought against. Trying to appear young when one is not is a mistake. It is a false position, and in every false position is weakness, discomfort, and misery. If old age is ashamed of itself, it will be despised by others.

Many old people, like the palm, bring forth their best fruit in old age. Irving wrote his best work, "The Life of Washington," when he was past seventy. Lord Palmerston achieved his greatest success at sixty-five, and won his last great victory at eighty. John Quincy Adams was an ex-President at sixty-two, but took up the study of the Latin classics to keep himself fresh; was elected to the House of Representatives, where he served till his death, at eighty-one.

While autumn is beautiful as spring, old age ought to be pleasant as youth. The happy old man has a smile like mellow sunshine. His face is a benediction. His home is a Mecca, to which children and grandchildren delight to make pilgrimages. *Exchange.*

ANTISEPTIC TREATMENT FOR PUTRID ROOT-CANALS.—M. de Marion's antiseptic treatment of putrid root-canals is as follows: He opens the pulp chamber as usual and cleans that as well as the canals of all putrid matter. Formaldehyd is then introduced on threads of cotton and evaporated with a heated silver wire. This treatment is repeated two or three times at same sitting. A temporary dressing is now made of cotton shreds saturated with formaldehyd and geranium and the cavity is closed air-tight, with wax or gutta-percha. Two or three days afterwards the same treatment is repeated. The essence of geranium serves to find out any putrid matter; left in contact with the same, it changes its mild and agreeable smell, and only when the latter is pure a permanent filling can be inserted.

F. A. B., in Dental Weekly.

EDITORIAL.

THE WATER CURE.

In February BRIEF Dr. Haskell speaks highly of the Turkish bath for sunstroke, and incidentally of the curative efficacy of the water cure.

For inflammation, fever, rheumatism and many other disorders, we believe there is no treatment so prompt, innocent and thorough. When I brought my degrees from my medical college, I had such implicit faith in my "Standard Authorities" and my college teachers and teachings that I pood at anything I had not there learned. But in actual practice I gradually found many things had to be learned from close observation and intelligent experience. I learned that, while medicins had their place, hygein, common sense and simple remedies could not be overlookt. Among the latter was the use of water. I gradually used less and less medicins and relied more and more on the abandonment of bad living, the establishment of good habits, and the little help I could give the physical forces in overcoming obstacles and reëstablishing normal activities. Was there evidence that the stomach contained indigestible food? I would relieve it, not by a drastic cathartic, but by a warm water emetic. Was there inaction of the bowels, with the many congested and perhaps feverish syptoms which often accompany it? I ordered copious drafts of hot water, and perhaps an injection of it. Was there general fever? I would induce a sweat by the hydropathic pack or the Turkish bath. Was there inflammation of any part? I would increase the flow of blood through the inflamed portion by hot water bandages, followed by massage and, perhaps, cold water, on the theory that inflammation was induced by an obstruction in the circulation. Was there gravel? I forbade food and drink favoring its formation, and advised a free use of very soft water, slightly acidulated, to dissolve the limely concretions. Was there rheumatism? I acted on the theory that this, too,

was an obstruction of the circulation, and in addition to acidulated soft water used the hydropathic hot pack twice a week to draw to the surface effete matter, and make the skin do what the internal excreting organs did not do.

Thus, instead of poisonous irritants, depressing narcotics, drastic cathartics and weakening compounds of a thousand kinds, I simply did what I could to help the weakened forces. Among all my allies, the chief was water, at different temperatures and intelligently used.

The only drawback was that it made the physician so much of a nurse that it was very laborious, and cured my patients so soon that I could not run up large bills.



THE TERRIBLE MICROBE. *

It all at once develops that the physician could cure disease easily enough if it were not for the terrible microbe. In fact, there would be no disease if it were not for this terrible microbe—that the sole purpose, and work, and end of this terrible microbe is to kill, destroy and devour. Everywhere, according to these new investigators, microscope in hand, and eyes dilated to see what common mortals are not expected to see—they are the scourge of humanity; yes, and of every other living thing. If the doctor fails to cure his patient, it is because this terrible microbe will not let him. If his patient gets well, it is because the doctor has vanquished this terrible microbe. If the patient dies, the doctor does not kill him; it is this terrible microbe. They are in our food and in our water; the very air we breathe is full of them, and they saturate our clothing and hydrate on our skin. Yes; they enter the pores of our skin and there breed, and grow, and die, and putrefy, and inoculate every tissue with the terrible poison of their death.

It was once thought they were the product of disease, but now they are the cause. It was once supposed their presence was caused by neglect and unsanitary conditions, but now they invade the cleanest homes and bore in the healthiest subject.

We were once warned that they followed pestilence, famine and death, but now they bring these terrible scourges to us, and it becomes a fight, not between us and the plagues, but between us and these terrible microbes, bringing these plagues on their backs.

What a sad, miserable, frightful, inevitable condition we have come to!

But lo! A new gospel has come to us. The microbe is our savior! It is the cause of life, and happiness, and longevity! Hear Dr. Woodward, in the *Lancet*:

"The tendency has been to accept them (bacteria) as the ultimate causes of some forms of deadly disease and as promoting the evolution of putrefactive products; whereas, in fact, they are instrumental in keeping the world sweet and clean for its inhabitants, and in maintaining a constant circulation of organic matter from the dead condition to the living and from the living to the dead. It is interesting to reflect that without the aid of bacteria the human race would be unable to continue its existence, the animal and vegetable world would long since have perished from sheer inanition and starvation, and the work of the world as a laboratory would have come to a standstill."

"As first promulgated," says the editor of the *Medical Age*, "this germ theory was delightfully simple, viz.: that every contagious disease is due to a specific germ. No microbe, no disease; eliminate the former and the latter is at once relieved. Latterly the fact has been recognized that the microbe is frequently found and the disease is as frequently absent. To meet the occasion the bacteriologists now assume that it is not the presence of the germ, but some virulent condition of the microbe which causes the disease; in other words, the diseased condition is common to both the germ and the patient."

It is better not to make a fad of anything. Proper attention should be given to micro-organisms, and we should be thankful we are learning better how to overcome the ravages of infectious species, but we may go to extremes in anything.

WHAT IS EDUCATION?

It is not so much the accumulation of facts that makes us wise, as the skill to use them. A few facts well handled are worth thousands lying about loose. We may learn all the greatest schools can teach us and know little. A profundity of facts may make a cyclopedia, but to make a scholar facts must be seed germinating in a warm, rich soil, brought to fruitage by wise and patient tending. No one but ourselves can be the gardener, and no skill but our own can bring to perfection the planted seed. Culture—the developing, strengthening and maturing of our intellect, the sharpening, refining, the increasing the power of each faculty, and the mastery of all of them to grasp, vitalize and wisely use facts—the power of converting knowledge into wisdom, and wisdom into skill, and skill into wealth of being and doing—this is true education, and this must come from within. The measure of our capacity and power is what we make of ourselves, not what others make of us. What we receive is the seed; what we make of that seed is brought about by cultivation. To remain only as seed, it is of little use.

It is one thing to know facts and quite another and more important and practical thing to have the wit and wisdom to apply these facts to immediate and every-day use. When the time of test comes, many a young man is heard to say, "I know how, but I can't do it." He knows the facts, he has the theory, he can see his ideal, but he cannot reduce what he has been taught to the practical things of life. That is, his learning is all right, but he lacks the skill to use it. Thus many a scholar comes from his school to find that, though his head is crowded with facts, he is, in the application of those facts, a comparative *ignoramus*. He has at hand the tools, the materials, the knowledge, a fine office, willing patients and a parchment that makes him a professor, a learned man, a teacher of the people, yet he stands at his new, gorgeous chair, confused, confounded, conquered by the pigmies that rise up before his first efforts to challenge the application of what he has learned to what he must now do.

Why all this weakness where there should be strength? of ignorance where there should be definit, practical knowledge? of hesitancy, mystification and blundering where there should be clear sight, steady nerve and commanding skill?

It comes from the education of hearing, seeing and receiving without the education from thorough thinking, close reasoning, and practically demonstrating what the teachers teach. The former gives a multitude of facts, beautifully woven theories and the memorizing of formulas and datas, names and figures; but these are not sufficient without the wisdom that comes from their digestion, and the skill that comes from their practical application. They must be so sifted and kneaded, and molded by a laborious brain, and so repeatedly and carefully applied to practical use that they become a part of our very self. This is the way knowledge becomes wisdom, and wisdom skill, and skill delightful and useful things of art. This is the education of culture as well as memory, without which the collection of mere facts is useless. Facts are dead things till they are vitalized by the electric touch of our enthusiasm, but enthusiasm is a wild horse till it is subdued and controlled and guided by reason, and reason itself is comparatively useless till it trickles down from the brain to the finger tips and displays itself in realistic things. Knowledge is power only when it so seizes on our whole being as to make us a master behind the instrument, a living, acting personification of that knowledge.

It is this willingness to be a mere echo, a reflection, an imitator of our superiors, that hinders many of us from being profound, prominent and prosperous. Though books and teachers must lay the foundation of learning, we must be more than books and schools can make us—more than their echoes.

To be what we may be, and what is within our reach to be, we must be in this wilderness of ignorance, shams and assumptions a distinct, intelligent, instructive voice, so personal, attractive and illuminating, so important, forceful and commanding, that it will make for us place, influence and remuneration.

This is the creation, the culture and the development of forces we call **education**.

SKUNKS AND LOBELIA AS DENTAL ORNAMENTS.

Sometime ago I referred to a dentist who associated with skunks and pet turtles, and lobelia and tobacco plants. It was no joke, or dream of the imagination. This dentist said he loved these things and thought they were pretty and ornamental to his office. He certainly took pleasure in showing and playing with them. He actually caressed the skunks in his bosom, and allowed the slimy turtles to crawl from their tub to his lap for food; and he would crush a nosegay of the savory plants for a sweet perfume, and stroke his shaggy tobacco stained whiskers with them. He grieved seriously that the police had threatened to interfere with his skunks. Some of the neighbors had complained that sometimes they were invaded with a dreadful stench. The dentist replied that this was the skunk's defense against cats. "But," he continued, "I just told the police that I should not interfere with their capturing my pets; for let any stranger interfere with them, and—well he could but laugh at the squirting of the fire engines that would be stronger than water."

Do you believe that man had refined taste? Can you conceive of patients loving such a dentist, or coming near enough to him to have him work in their mouth? No; his whole surroundings were as forbidding as his pets. He must have been repulsive to every refined caller. Yet he was such a skilled workman that many tolerated his filth and eccentricities. He had been a popular practitioner—one of the leading dentists of the city. And he did not fall into this disgrace suddenly—none of us fall or rise suddenly, it is by slow degrees. It came to him so gradually he did not realize the final radical change. He spoke truthfully of the nice, refined, esthetic patients he used to have, *but*—and all the blame was on the *buts*—young sprouts of the profession had weaned them from him. He showed me clearly that he was a master workman, *but* new fangled notions and processes had shoved him aside. His office was in the most fashionable thoroughfare, *but* fashion had decreed that dental offices must be in resident sections. His spacious rooms used to be considered good enough and well enough furnished for a king, *but* now tinsel and gew-gaws were necessary to attract and entrap. Thus grad-

ually he had been left behind,—not because *he* had changed, but because the young bloods who were pushing and rushing by him had not learned good manners, and were not content with good, old solid work. Yet he had still as his patrons some of the oldest and most conservative families of the community, and he was proud to say it.

O that we could see ourselves as others see us—and see our faults as they are creeping on us, and disfiguring the symmetry of our character. Then we could easily brush them aside, and assert our virgin purity and strength, and continue to progress. But when our faults become fixed habits they make us a fixed nuisance. They stagnate our energies, warp our judgment and so benumb our moral and esthetic sensibilities that we can make no improvement. They bind us and blind us and bury us beneath the debris of our past.

Be cleanly. And do not be self-deceived. Sometime since I was in the office of a very pink of cleanliness in everything—but his spittoon. O, that was filthy. I was the first visitor of the day. The sweeping and dusting had been done nicely, and everything put in q p order. The man had prepared himself as for a special occasion,—but that spittoon was just full of the abominations of the previous day. Yet I was invited to take the chair for the inspection of my teeth! Horrors! What a stench!—and it was so two hours later when another patient was being served. And this was not the only day his patients might have complained. To look at that man you would not believe there could be anything unclean about him or his office. And he was doing a first class business, too. I suppose he had gradually got in the habit of neglecting just this one thing.

What is the one thing prejudicing your popularity? Look for it, search diligently for it, and be determined to be rid of it. Your best patients will thank you. The one thing; what is it? Is it the offensive cigar, the scent of stale beer, the languor of dissipation? These cost too much to be continued.

KERNELS.

Whatever is worth doing is worth doing well.

Make a specialty of everything you do.

Anciently, fashionable Egyptians gilded their front teeth.

Take care of the little things in an operation, and the great things will take care of themselves.

There is nothing you can slight without involving the most important.

We all should be readers and thinkers. As soon as we neglect either we fall behind in the world's great procession.

Fault finding is not always an evidence of folly; but the secret of wisdom is to find fault wisely.

Men on an average weigh twenty pounds more than women. But the value per pound is the main thing.

Rapid eating is the curse of our civilization. Two-thirds of the sickness is caused by our habit of eating a full meal in fifteen minutes.

Do not be afraid of breaking down frail enamel in preparing a cavity. It is provoking to see it break away after an hour has been spent in filling the cavity. Also have respect to the shape of your cavity. It should not be irregular and angular. The margin, too, should be nicely beveled.

Tartar is not often a tooth destroyer. Frequently the more it accumulates the less is the liability to caries. It sometimes actually serves as a protection and arrest of decay. We have seen large cavities in teeth that for years had been so loaded with tartar as to entirely fill and cover the carious portion, and had all these years prevented further decay.

Dr. Thomas W. Evans, of Paris, left eight, and some say ten, millions' worth of property. His bequest for a dental institution in Philadelphia is surrounded with some difficulties.

One pound of flowers of sulfur and one gallon of linseed oil, boiled together till they are thoroughly combined, forms a good waterproof varnish for any textil fabric.

Cocoanuts are one of the most healthful and nutritious of foods. In their fresh, soft, ripe state they are meat and drink of the most palatable and lasting qualities.

There is evidence in the remains of the tombs of the ancient Etrurians that teeth, even then, were sometimes filled with gold and some kind of amalgam or fusible alloy.

In filling root-canals every dentist has his pet method. A dentist of considerable practice tells me his plan is to fill with chloro-percha, and then pressing in a stiff, fine cone of gutta-percha. Of course, the canal is first thoroughly cleansed and opened as far as it is possible, and then still farther prepared by sulphuric acid or peroxid of hydrogen and rinsed with alkali.

If a needle pierces one of the joints, it is of the utmost importance that a surgeon should see it, for such punctured wounds, unless treated promptly and properly, sometimes lead to loss of limb and even life.

The controversy among physicians as to whether appendicitis can be cured as effectively by medical treatment as with the knife has broken out anew. Dr. Terry, of Utica, who is Surgeon-General of the National Guard, says that out of a total of fifty-one case treated in this way forty-nine recovered. They were treated with cathartics, sweet oil and hot water.

Oxiphosphate fillings are much improved of late, the material is intrinsically better, and it is better manipulated. There are some makes on the market that resist the action of acids and alkalies with remarkable tenacity.

Dr. John Welch, one of the most popular dentists in Oregon, writes us of the recent death of his promising son, Dr. Frank P. Welch, at Albuquerque New Mexico, whence he had gone for health. He was 29 years of age, a graduate of the University of Pennsylvania; opening practice in Portland, Oregon, with flattering prospects. Like his father, he was a favorite in the profession throughout the State.

Every new case should be a new study; for, as in medicine, the systemic symptoms and the environment, and the cause, and therefore the effect and treatment, must vary. But this need not cause doubts and fears, uncertainty and indefiniteness. Be so thoroughly grounded in your general knowledge that you can grasp the situation clearly, and speedily become a master of yourself and the case.

There is no necessity of being so conceited as never to learn a new thing, and never improve on the manner of doing what you do. A wise man is always changing, for there is no improvement without change. A fool never changes, and, therefore, never improves.

Dr. Louis Ottofy, of Chicago, says: No operation of the dentist so nearly reproduces nature as that of an implanted tooth, and the result, when successful, in appearance and comfort cannot be excelled by any other operation within the domain of the entire science of dentistry.

Canada balsam in chloroform rubbed on the walls of a cavity before filling with gold is thought by some to be good practice. Tincture of benzoin is also good. Either makes an impervious coating against moisture, and by its stickiness helps in placing the gold and making an airtight filling.

That man who is contented with the allurements of the bower will never reach the goal of the successful. We must feel the necessity of keeping up with the procession, or we shall be left by the roadside. We must push our way to the front, or we shall be forced to the rear.

Nikola Tesla has invented a light of intense power, which will be of great benefit in photography and also as an illuminant. It is an improvement on his vacuum tubes, and will undoubtedly supersede the incandescent lamp.

How foolish to make past failures a hinderance to future endeavors. Though nine in ten of all enterprises fail, the world progresses; so, though nine in ten of all our enterprises fail, we progress, learning wisdom even from our failures.

Rid yourself as far as possible of technicalities. Let your thoughts and language, and even your manners, be transparent, familiar, unsophisticated. Think clearly, speak plainly, act directly. Brush aside mystery, shake off superfluity and ignore a studied expression that offends simplicity.

In some parts of China the young women wear their hair in a long single plait, with which is intertwined a bright scarlet thread. This style of ornamentation denotes that the young lady is marriageable.

Sugar, taken in small quantities, aids digestion, and sugared water is an excellent means of relieving the stomach of foods which have remained there too long. Sugar is not heating unless taken in excess or overcooked, or unless it is combined with exciting substances, as in sweets.

To mark steel tools, warm them slightly and rub the steel with wax or hard tallow till a film gathers. Then with a needle scratch your name on the wax, cutting through to the steel. A little nitric acid poured on the marking will quickly eat out the letters. Wipe acid and wax off with a warm, soft rag, and the letters will be clearly etched.

An overpowering odor caused great distress in a neighborhood of Council Bluffs, Ia., one evening, and one family was impelled to remove to a relative's home. On the return next day there were peculiar sounds in the attic, and the husband started to investigate. Above the top round of the attic ladder he saw a bushy tail projecting, and he didn't go up. Not the most reckless boy in the family had the least desired to pull that tail.

Many years ago we were among the first to give to the profession a soft, cohesive gold foil. The secret of the process was in heating nearly to the melting point many layers of the ordinary foil in an iron box, each sheet separated by a sheet of mica, and then plunging the whole into cold water. We then again heated to about 225 degrees Fahr., allowing it to remain at about that heat for some time, and then cool gradually. Sometimes this was repeated at a still higher temperature.

To model in clay or other material, the image to be reproduced must be clearly in the mind, and this must be worked to with care and nicety. In forming a tooth for a special use, we should have a definite thought of its general anatomy and the special characteristics of the teeth with which it is to be associated, and the features and general outline of the person for whom it is made. And the general shape and appropriateness of form are not enough. If its mate is before us we shall discover delicate lines and grooves and little artistic niceties that without this special examination of the natural tooth we should not dream of. It is an art study well repaying the effort.

FOR OUR PATIENTS.

HOW REVEALED.

It is not so much what you say
As the manner in which you say it;
It is not so much the language you use
As the tone in which you convey it.

"Come here!" I sharply said,
And the baby cowered and wept.
"Come here," I cooed, and he looked and smiled,
And straight to my lap he crept.

The words may be mild and fair,
Or the tones may pierce like a dart;
The words may be soft as the summer air,
Or the tone may break the heart.

Whether you know it or not,
Whether you mean or care,
Gentleness, kindness, love and hate,
Envy and anger are there.

SINGULAR CURE BY A BARBER.

An occasional correspondent, writing from Mainz, recalls the time when barbers were leechers, dentists, music-masters and generally Jacks-of-all-trades. Here and there the tradition still lingers, as in Russia and in out-of-the-way parts of Germany; but the utmost that modern Figaros now attempt is to sell leeches and to treat a few incurable ailments. A case which has just occurred in Eich is the exception which proves the rule, and proves much else over and above.

Eich is what Germans call a little "nest" in Rhineland, well out of the turmoil of industrial centers, and its inhabitants are simple, true-hearted folks, who might successfully colonize the Garden of Eden, should it ever be discovered. One of the male members of this ideal community slipped, fell, and hurt his arm last week. He at first treated the accident as a trifle, but when the limb began to swell and cause him acute pain he went to bed

and prepared to go to—heaven. His wife, anxious to save his life, and if possible his limb, sought for assistance, and as there was no doctor near at hand, naturally appealed to the barber. The Figaro of the Rhine examined his patient, and prescribed applications of Goulard water, which in Germany is called blei-wasser. The woman, however, rushed to the chemist's, and in an excited state of mind asked for wasserblei, which means black lead.

She hurried home to her better half and at once began operations. Mixing the black mass with ice-cold water, she made a portly poultice for the injured limb. Then she rubbed the stuff vigorously into the pores, and ended by polishing the arm with warm flannel. And her efforts were crowned with brilliant success. The excruciating pain ceased, the swelling diminished rapidly, and her husband's brawny arm shone so brightly that she could almost see the reflection of her own glad features in it. There was not a flesh-colored spot from the elbow to the wrist.

The barber duly called next morning to inquire how his patient was doing, and the delighted woman, who met him in the street, thanked him heartily for his good advice, and escorted him to the sick chamber. He approached the bed jauntily, cheerfully jerked the blanket aside, and then, turning ashy pale, he screamed wildly, "Good heavens! how can you say the poor man is better? Run as hard as you can for a surgeon; the arm must be amputated before it's too late. And ach! I fear there is no hope. Gangrene has already set in, ach Gott! ach Gott! Run, run; he is dying of black gangrene!" When the physician arrived, pinched the arm, which convulsively struck him in return, and then saw that his fingers were as black as a stoker's, he used some expressions which sounded like medical Latin, and he glanced at the barber with a grim, sarcastic grin such as overspread the faces of the American field laborers who, after having carried some hundreds of buckets of water to put out a burning hay loft, were told by the man that he had mistaken the sun's evening glories for flames. The practical question now is, who will pay the doctor?

Daily Telegraph.

Our silk industry has increased rapidly. Last year its value was \$100,000,000. Sixty-four thousand bales of raw silk, worth \$28,000,000, were used and fifty-seven new mills erected. The prices of good silks are now within the reach of the masses, and this fabric is really economical.

TORTOISE SHELL.

The hawk-bill turtle, or *eretmochelys imbricata*, yields the best qualities of tortoise shell. It is found principally in the Malay Archipelago, along the east coast of Celebes, New Guinea, the West Indies, and Brazil, where the animals love to bask in the sunshine and heat of the sands along the sea coasts and banks of large rivers.

The Horological Journal tells us that every part of the tortoise is useful, even to the toes. The back comprises thirteen pieces, which look very much like the scales of a fish, and are called the carapace. They are thick in the center and become thinner toward the edge. The under shell (belly) is very thin and amber colored. The shell is first sorted into different grades, sizes and according to thickness, the choice pieces being laid aside for special working. The first process the shell is subjected to by the manufacturer is a hot salt water bath, which cleans the shell thoroughly. On becoming cool and hard again, for the action of the hot salt water softens it, the turtle's armor is sandpapered to free it from all blemishes and smooth it for working. The pretty dark brown and amber colors now show themselves somewhat as in the finished article, and the designer can judge better how to fit his pattern so as to get the prettiest part of the shell into his design. The pattern having been traced, the design is cut out much in the same way as a piece of scroll work with a fine-toothed saw. If the article is to be a fancy comb or hairpin, the comb is sawn out first and then given into the hands of an engraver, who carves the design which adorns the top, according to the outlines made by the saw. On leaving the hands of the engraver the shell is again immersed in a bath of hot salt water, and while soft bent into the desired shape; and when hard again, is sent to the "rubber," who by the use of pumice stone and oil takes off all the burs and uneven lines left by the engraver's tools and saw. It is now ready for polishing. No rouge or polishing powder or varnish is used. There is sufficient oil in the shell to give it a high polish when a cotton flannel or chamois wheel is used, revolving at great speed. The polish so obtained has a beautiful and lasting finish. The "belly" or under shell is the most costly part of the tortoise. It is amber colored and some of it almost as thin as tissue paper. How ornamental combs and other large articles can be made from shell not thicker than paper may not at first seem clear to the reader.

The fact that tortoise shell is weldable has made the under shell valuable.

In the hands of an expert tortoise shell worker a comb or any other trinket of tortoise shell can be repaired with such exactness that the breaks cannot be discovered with a magnifying glass. The "belly" shell is so thin that it would be valueless if not weldable; it is rendered so by being placed in a steam heater, when it can be made into any thickness desired.

During the process of welding much care has to be exercised that the fingers do not come in contact with any of the parts to be joined, as the oil from the hand will blister the shell and make it impossible to weld the parts perfectly.

Family Doctor.

WHAT PLUCK CAN DO.

The boy marched straight up to the counter.

"Well, my little man," said the merchant, complacently, "what will you have to-day?"

"Oh, please, sir, mayn't I do some work for you?"

"Do some work for me, eh? Well, now, about what sort of work might your small manship calculate to be able to perform? Why, you can't look over the counter!"

"Oh, yes, I can, and I'm growing, please, growing fast—there, see if I can't look over the counter."

"Yes, by standing on your toes. Are they coppered?"

"What, sir?"

"Why, your toes. Your mother could not keep you in shoes if they were not."

"She can't keep me in shoes anyhow, sir," and the voice hesitated.

The man took pains to look over the counter. It was too much for him; he couldn't see the little toes. Then he went all the way around.

"I thought I should need a microscope," he said, very gravely, "but I reckon if I get close enough I can see what you look like."

"I'm older than I am big, sir," was the neat rejoinder. "Folks say I am very small for my age."

"What might your age be, sir?" responded the man, with emphasis.

"I'm almost seven," said Tommy, with a look calculated to impress even five feet nine. "You see, my mother hasn't anybody

but me, and this morning I saw her crying because she couldn't find five cents in her pocketbook, and she thinks the boy who took the ashes stole it, and—I—have—not—had—any breakfast, sir." The voice again hesitated, and tears came to the blue eyes.

"Humph! Where is your father?"

"We never heard of him, sir, after he went away. He was lost, sir, in the steamer City of Boston."

"Ah, that's bad! But you are a plucky little fellow, anyhow. Let's see." And he puckered up his mouth and looked straight into the boy's eyes, which were looking straight in his. "Saunders," he asked, addressing a clerk who was rolling up and writing on parcels, "is Cash No. 4 still sick?"

"Dead, sir; died last night," was the slow reply.

"Ah! I am sorry to hear that. Well, here's a youngster that can take his place."

"Mr. Saunders looked up slowly; then he put his pen behind his ear; then his glance traveled curiously from Tommy to Mr. Powers.

"Oh, I understand," said the latter. "Yes, he is small, very small indeed, but I like his pluck. What did No. 4 get?"

"Three dollars, sir," said the astonished clerk.

"Put this boy down for four. There, youngster, give him your name and run home and tell your mother you have a place at four dollars a week. Come back on Monday and I'll tell you what to do. Here's a dollar in advance; I'll take it out of your first week. Can you remember?"

"Work, sir. Work all the time?"

"As long as you deserve it, my man."

"Tommy shot out of that shop. If ever a broken stairs that had a twist through the whole flight creaked and trembled under the weight of a small boy, or, perhaps, as might be better stated, laughed and chuckled on account of a small boy's good fortune, those in that tenement house enjoyed themselves thoroughly that morning.

"I've got it, mother. I'm took. I'm a cash boy! Don't you know, when they take parcels the clerks call 'cash?' Well, I'm that. Four dollars a week! And the man said that I had real pluck—courage, you know. And here's a dollar for breakfast; and don't you ever cry again, for I'm the man of the house."

NOTICES.

We propose a page of gratuitous notices to the dental profession to reestablish friendly intercourse between college-mates and professional friends. (Queries limited to two lines to each in any one issue.)

Dr. T. R. Harvey, Westfield, N. J., desires information concerning class friend, Dr. L. H. Fisk, P.C.O.S.

Will Dr. Edwin Rogers write me his address? Dr. F. P. Farrow, Washington, N. J.

Dr. F. L. Grier, Dover, Del., asks for present whereabouts of Dr. J. Alberto del Solar, whose home was in Santiago, Chili.

Are Drs. M. E. Groseman (Honolulu) and C. W. Chapman (California) still among the living? Some one please furnish me their present addresses. W. S. Kelly, D.D.S., Wilkesbarre, Pa.

The fourth annual meeting of the Southern Wisconsin Dental Association will meet at Dodgeville, Wis., Wednesday and Thursday, May 4th and 5th, 1898. A cordial invitation is extended to the profession at large to meet with us.

Dr. W. J. Funston, Pres., Platteville, Wis.

J. H. Reed, D.D.S., Sec., Lancaster, Wis.

The fifty-eighth annual commencement of the Baltimore College of Dental Surgery will be held at Ford's Opera House, Baltimore, Friday, April 1st, at 3 P. M. The alumni meeting will convene at the college building Thursday, March 31st, at 11 A. M., to which all graduates of this school are most cordially invited. Eminent essayist to be present. Banquet at night.

W. W. Dunbracco, Sec'y.

NORTHERN IOWA DENTAL SOCIETY.—At the meeting of the Northern Iowa Dental Society, held at Mason City, September 7th, 8th and 9th, 1897, the following officers were elected for the ensuing year: Dr. G. N. Beemer, President; Dr. A. N. Ferris, Vice-President; Dr. G. H. Belding, Treasurer; Dr. Wm. H. Steele, Secretary, Forest City, Iowa.

The Southern Branch of the National Dental Association held its first annual meeting in St. Augustine, Fla., February 22d-25th. The papers presented (twenty in number) were of an unusually high order of merit, and the discussions scientific and intellectual in character. The election of officers resulted as follows: President, Dr. Wm. E. Walker, Pass Christian, Miss.; First Vice-President, Dr. T. P. Hinman, Atlanta, Ga.; Second Vice-President, Dr. H. H. Johnson, Macon, Ga.; Third Vice-President, Dr. E. F. Adair, Harmony Grove, Ga.; Treasurer, Dr. B. D. Brabson, Knoxville, Tenn.; Corresponding Secretary, Dr. C. L. Alexander, Charlotte, N. C.; Recording Secretary, Dr. S. W. Foster, Atlanta, Ga. Two new members of the Executive Committee to run for three years: Dr. I. Simpson, Rock Hill, S. C.; Dr. E. G. Quattlebaum, Columbia, S. C. The association will meet in New Orleans, La., February 15th, 1899.

THE TACOMA COLLEGE.—The Tacoma College of Dental Surgery opened its fifth annual term October 1st with a very fair enrollment. It has added several new features and enlarged several more, until now it appears in a very favorable position among educational institutions of its kind. The National Association of Dental Faculties, after thoroughly investigating its affairs, admitted it into full membership as a measure of its faith in the school. We hope the entire profession of this State will give all the aid in its power to build up this school as the pioneer one of the Pacific Northwest.

And now for the exhaustive study of "Cataphoresis, or Electric Medicamental Diffusion as Applied in Medicine, Surgery and Dentistry," by Wm. J. Morton, M.D., American Technical Book Co., New York.

Here we have 260 pages devoted to this subject in all its phases, by one who has given the subject long, studious and practical investigation and daily application.

According to a medical paper in Germany, the man who loses both his hands in an accident can claim the whole of his life insurance money, if he be insured, on the ground that he has lost the means of maintaining himself. A loss of the right hand reduces the claim to from 70 to 80 per cent of the total.

DENTAL BRIEF.

VOL. II.

MAY, 1898.

No. 10.

ORIGINAL COMMUNICATIONS.

PRACTICAL POINTS ON PORCELAIN FILLINGS.

W. A. Capon, D.D.S., Philadelphia.

Mr. President and fellow-members of the Alumni Society of the Philadelphia Dental College:—The title of my paper, "Practical Points on Porcelain Fillings," seems to me very appropriate on this particular occasion from the fact that this class of work first received its impetus in this community within the walls of the Philadelphia Dental College, in the year 1889. I was then a senior student and very much impressed with the possibilities of this work, and extremely anxious to practice and perfect myself in this new branch of dentistry. My preceptor, knowing my inclinations and tendency to natural shading and small manipulative work, urged on me the importance of securing the practice afforded by a college clinic. Through his influence with Doctor Land, of Detroit, the inventor of the furnace and perfector of the work, I secured a furnace. I then interviewed some of the members of the faculty and, although skeptical and somewhat curious, and no doubt amused at my enthusiasm, kindly granted me permission to tap a gas pipe in the operating room. From that time till the term expired, the noise of that little furnace could be heard almost every day, and I made porcelain inlays till my heart was content. The boys called me a "porcelain crank," but I industriously continued to make fillings for all kinds of places, and crowns never thought of before or since; and yet, after nearly nine years, I am proud and pleased to know that much of that work was successful and is doing excellent service to-day, and many of my college patients are my staunchest friends and firm adherents of porcelain fillings. It is very true that some of it failed, and it would be very remarkable if it had not, when one considers the disadvantages that had to be overcome and my small knowledge of what I was doing, or what might be expected of it. Years afterward, I look back

on that short college term with a considerable degree of satisfaction, for it enabled me to start a foundation that I was privileged to continue after a year of special instruction in this particular branch.

Porcelain fillings, inlays or sections form a part of dentistry distinctly its own and in no way antagonizing the other portions of operative work, for all practicing dentists have cases where teeth are only saved by continual patching and refilling with cement or gutta-percha, putting off the evil day when the tooth will have to be devitalized and crowned. In a case such as mentioned, and not at all exaggerated, a knowledge of porcelain fillings, and the means of making them, might have saved the tooth and probably the reputation of the dentist. Not only is this work distinct because it fills a long desired want, but its character is decidedly different from other work, and must be treated with caution and practiced with extreme conservatism. Added to this, one must have a good bump of location and a natural tendency to shading and manipulative dexterity. Those fortunate in having these combinations, or a portion of them, and the perseverance to acquire the rest, can be safe in feeling that practice will make him a porcelain worker, or, a preferable term in my estimation, an art dentist. Of course we all know that a man or woman may be an artistic dentist in many other ways, in the laboratory as well as in the operating room, but the most artistic gold filling must be secondary to a well adapted, correctly shaded and properly contoured porcelain filling. The former requiring close and continued application over a tied-up and, in many cases, nervous patient, while the picture of the latter is much more pleasant to behold, and decidedly more acceptable to the patient, and the result must be artistic because you have not only restored the original form, but the shade also, and approximated the texture of the tooth. I have advised caution and conservatism because experience has taught me their value, and such practice will insure reasonable success. There is a certain fascination about this work that, if you are not well guarded, trouble will be met with. It seems to be a tendency of a beginner in any specific branch, whether it be porcelain, making bridges or gold caps, to overdo it, and he goes gloriously on, wondering why everybody does not come to him for their dentistry till, to use a term of the day, he gets a puncture in the shape of some "thank you" work, and then, if he is wise, the first entry on the experience page will be made. I know dozens of dentists who have in the last few years taken up porcelain

work, and after a little while given it up, completely disgusted and convinced that there is nothing in it, and express surprise that I am still an adherent and meet with success. Some of these parties I have put on the right track, while others were content to leave it alone.

To have you understand more readily what I consider safe practice, I will, for your guidance, divide the cavities in three grades, and call them suitable, doubtful and those to be avoided. To be more explicit I will show at the conclusion of this paper a few sketches of teeth and their cavities in the order named. Among the most suitable places for porcelain inlays, fillings or sections I will name the cervical margins on the labial and buccal surfaces of all teeth from bicuspid to bicuspid, upper and lower, but particularly the upper, proximate cavities, corner and cross sections of the oral teeth; under the second head, or doubtful, place proximate pin-head cavities, proximal margins and distal proximate surface of bicuspid, and in the last case, or those to be avoided, place all molar cavities. The coronal surface of bicuspid, very small corners on incisors, also the abraded edges of the same teeth. There is one exception in the last list that can be safely placed among those of the best, and that is the mesial proximate surface of first molar, simple or compound cavity, where space has been made by the loss of second bicuspid. This allowing good access for impression and withdrawal of matrix. The cavities in the preferred list are all accessible or can be made so by separation. The second class may be reduced by the dexterity and experience of the operator if so desired, but as a rule, pin-hole fillings are difficult to handle, and not much to be gained by using them; but of course in this work, as in all other, you must be governed by circumstances. Those in the last list are so placed because of the impossibility of getting a good impression, and the great pressure brought to bear on a brittle substance on the grinding surface of molars and bicuspid.

The preparation of a cavity for the reception of porcelain is similar to that which is intended for gold or plastic work, excepting the edges, which must be made square to allow of a better joint. A slight undercut is all that is necessary; otherwise the impression cannot be withdrawn freely. Plenty of space is imperative if filling between the teeth, for, unlike other fillings, they are finished before inserting, and being a brittle, unyielding substance, there is danger of breaking if forced where the space is insufficient. The use of a Perry or ivory separator will assist

very much in many instances. The platinum foil must be thoroughly annealed and will resemble ordinary tin foil that you are all familiar with. The metal is gently forced in the cavity with a small rubber tip, and then use an amalgam burnisher. The uninitiated are always dismayed at the hole that is invariably made through the foil, but that cannot be helped and is no objection.

The most important part of the whole procedure is the second burnishing after the first baking. It is then the edges are forced in place and the true fit determined. Carelessness, or an oversight at this time, will likely prove disastrous to the filling; therefore I must impress on you the importance of the second burnishing. When the filling is finished, remove the platinum and cut a groove on at least two sides with a rubber corundum or diamond disk, and cement in position. You may have excellent joints and a perfect shade, but the cement may spoil it all, especially those thin margin fillings where shade is the great requisit. Try to use a shade of cement as near the tooth as possible, and mix thin, otherwise it may pack and keep filling from going in place. If this should occur, withdraw it quickly, and commence again; then dry with hot air and cover with parafin wax, rubber or sandarac varnish. Leave the dressing of the edges till thoroughly hardened, and after a time you will be pleased with the apparent blending of shade in tooth and filling that was temporarily changed at the time of operation.

There are many discouraging things in the practice of this work; for instance, you may lose the filling when all ready for insertion; or it may drop and get stepped on; or the fit may be wretched, or the color away off. But just say to yourself, others have done this satisfactorily, and I will do it also; and if you succeed, your best friend will be your patient. Your brother dentists may laugh, and say they are no good anyway, for they will not last. If you feel that you are on the right track, do not mind these little discouragements and delays, for I have been through it all many, many times, and I am still pegging away, and now have hundreds of cases to back my assertions and prove success. I have a filling in my right lateral, inserted by my brother nine years ago, and recent inspection shows it to be all right, and I have seen some put in by Doctor Land twelve years ago and apparently as good now as when first made. Bear in mind that this class of work is not easy, and cannot be hurried over, for in no other branch of dentistry is that old saying more applicable, "First do it well, and then do it easily."

PICKED UP AT ST. AUGUSTINE.

Mrs. J. M. Walker.

Dr. W. E. Walker described the following method of mounting a Logan crown, making a crown which is hygienic, esthetic, strong, easy to construct, and which is adjusted with the minimum amount of discomfort to the patient. A Logan crown suited to the case having been selected, and the root prepared for crowning, beveled a little beneath the gum at the labial aspect, the base of the crown is so beveled as to make a fairly close joint at the labial surface and have a wedge-shaped space between root and crown, about one-sixteenth inch wide at the lingual surface, with the apex of the wedge at the labial margin. A circular groove is next cut in the face of the root between the canal and the periphery, in which is fitted a band of 22k. 28-gage gold. To this is soldered a thin plate of gold or platinum, which is burnished to the face of the root and trimmed to the size and shape of face of root, and perforated to admit the Logan crown pin. A similar plate of gold is next burnished to the beveled base of the porcelain, and a mass of Parr's fluxed wax placed around the pin. The plate on the root is now warmed by throwing a current of hot air on it; the porcelain is also warmed and placed in position, the pin entering the previously prepared canal. The warmth causes the wax, which now fills the wedge-shaped space, to adhere to both plates so that all can be removed together. When cool, remove, trim away surplus wax and invest. By using Browne's "investment fiber" mixed with alcohol, the alcohol can be ignited, drying out the investment, while the solder is being prepared. Now flow 18 or 20k. gold solder into the space between the two surfaces of gold, finish up, and cement to place. This method gives the advantage of a band for strength, while it obviates the necessity for a band on the outside of the root, the shaping of which for the reception of a perfectly fitting band is difficult, disagreeable and sometimes even painful to the patient. The band being within the structure of the root cannot irritate the tissues, and there is no exposure of gold in recession of the gum.

COLLAR CROWNS.

C. L. Alexander: I no longer find it necessary to band teeth where porcelain facings are to be used. By making a bevel on the edge of the root, when great strength is desired, a ferrule can be formed by burnishing gold plate down over the part, which, when united to the crown proper, makes a very

strong attachment. I never saw a banded crown, whether of my own or others, that was healthy and clean. I have abandoned it altogether.

L. M. Cowardin: The band extending beneath the gum I consider the bane of crowning. The collar causes far more harm than the root-splitting, which is the only pretext for its use. I have long since abandoned any attempt to band a root. I use the English tube-crown as the best means of crowning single-rooted teeth.

Dr. Frank Holland: I have never seen a banded tooth—one of the six anterior teeth—that was clean and the tissues healthy around the gum margin as in unbanded natural teeth. Nature will not tolerate any interference with the gum margins. I have taken off many banded crowns because of gingivitis; they are never healthy, and I doubt if they are as durable.

Dr. H. H. Johnson: For a long time I thought the only crown that could be a success was one in which the root was banded, but I have found that the bands were a source of irritation to the gum, that the gum receded and the gold became more and more exposed. I now use very few collars.

PER CONTRA.

Dr. J. Y. Crawford: Dr. Cowardin does violence to one of the most beautiful, most prominent, most successful operations—the collar crown. From the standpoint of prosthesis, of durability, of beauty, the Richmond crown stands at the head of the list. If a crown has no collar the result will be, sooner or later, no tooth at all, for the root will disintegrate if the joint is exposed to the fluids of the mouth. Cover up the joint between the root and the crown and keep out the bacteria and all the other little devils you talk about.

Dr. A. A. Pearson: I stand beside Dr. Crawford for the banded crown. I have one in my own mouth that I have worn for twelve years, and I know there is no recession of the gums, and no odor, when my mouth is kept clean. It is not necessary to wear a collar crown to create an odor if the mouth is not kept clean.

Dr. I. Simpson: As far as my experience goes—and I have put on a great many crowns—and also judging from what I have seen, a banded crown is much better than a crown without a band.

Dr. W. E. Walker: A band set in a groove in the face of the root gives the strength of a collar without exposure of gold,

irritation of tissues, leaves the enamel untouched and obviates the necessity for the tedious, unpleasant process of shaping the root for the reception of an outside band.

THE APPOINTMENT OF DENTAL SURGEONS IN THE ARMY AND NAVY.

Dr. Beadles, in his presidential address, spoke of the necessity for, and the good that would result from, the appointment of dental surgeons in the Army and Navy, and suggested the appointment of a committee to take this subject in hand, and also that the President of the National Association be requested to appoint a similar committee.

The subject was discussed at some length, and a resolution to that effect was offered by Dr. J. A. Chapple, of Atlanta, and adopted, the following committee being appointed to proceed to Washington and place the subject before the proper authorities: Dr. J. A. Chapple, Dr. B. Holly Smith, Dr. M. F. Finley, Dr. E. P. Beadles, Dr. H. B. Noble.

LIFE INSURANCE EXAMINATIONS.

The President, in his annual address, spoke of the importance of the organs of mastication as the very foundations of health, and the peculiar indifference to their condition as a factor in disease, manifested by the general physician. He thought if insurance companies made it a rule to require examination by a dental surgeon, as well as by the physician, before issuing life policies, both the public and the insurance companies would be benefited. The value of the teeth would thus be emphasized and their condition made of more consideration than they now receive. If statistics could be procured showing the condition of the teeth of the individuals whose death insurance has been paid by companies during the year, the officers would probably open their eyes in amazement. An intelligent study of the teeth might reveal facts in regard to longevity that would be surprising.

The densest population in the world is not in China, nor India, but in New York city. On thirty-two acres of its territory there are 984 citizens to the acre. The densest part of London has only 365 to the acre. And even Bombay, where we ascribe great mortality on account of its crowded condition, there are only 759 inhabitants to the acre.

ANCHORING LARGE CONTOUR FILLINGS IN INCISORS.

L. W. Skidmore, D.D.S., Moline, Ill.

From my observation of contour fillings I am led to believe we have in the anchoring of large contour fillings in incisors, where there is little penetration of decay toward the pulp, a class of fillings that seems to tax the ability of the average operator to perform.

Many of the failures in these fillings, which we credit to soft teeth, could be traced to improper anchorage.

The anchorage of all fillings which will be subjected to severe strain should be such as to protect them from any force that would tend to dislodge them from the cavity. The anchorage should be made as strong as possible without weakening the tooth.

There should be a strong square base at the cervical portion of the tooth for the filling to rest on.

The plea that tooth structure should not be sacrificed is wrong and should not be considered. The question to consider is, how can this tooth be put into the best condition to have it strong and lasting?

The question of saving this or that portion of a tooth we should not allow to prevent us from putting the tooth in the best possible condition for endurance.

The usual method of preparation is after giving the usual conformation to the cervical portion of the cavity, the anchorage at the occlusal part of the tooth is obtained by drilling obliquely between the two plates of enamel toward the cutting edge of the tooth. This is the method of anchorage which I find so often develops a weakness, resulting in a leaky filling and the formation of a crevice at the line of juncture with the enamel.

Other unsatisfactory results will often confront the operator who depends entirely on this method.

It is against persistent use of such anchorage I wish to protest, as I believe a better method can and should be employed, one that will save us many failures, and relieve us of the burden of telling our patients their teeth are too soft to hold the filling.

It is seldom sufficient in any class of cavities to risk the anchoring of the filling to what can be obtained by shaping the cavity as formed by the decay, but to anchor a filling so it will stand the force of mastication, it is usually necessary to extend the border of the cavity beyond the line of carious destruction, and in these fillings I consider it very important. Having deter-

mined to involve the corner of a tooth in our filling, enough tooth substance must be sacrificed to allow sufficient gold to be packed into the incisal portion of the filling to resist the strain of mastication.

The cavity must have enough retaining shape to resist the strain.

Some writers recommend the cutting of an auxiliary dovetail on the lingual surface.

This is doubtless an improvement on the first method described, and may sometimes be sufficient.

In dealing with these cavities, involving the restoration of the corners, careful attention should be given to the formation of the cavity border, which should be free from angles. It should be a continuous curve, not a succession of curves, as irregular borders will produce weakness along the points of contact between the filling and the tooth, and chipping of the margins will often occur while packing the gold, or if not then, you will frequently find it so in a short time.

Such a filling is a method of shaping the cavity border too often employed. We have the cavity border curved, but it is a succession of curves, and they make a weak border for any filling.

Sharp points should be cut away, for even if the filling should be inserted without causing a fracture at this point, the force of mastication is to soon break it away.

A deep cut is also wrong, as the gingival border to be strong should be formed flat, against which the gold can be packed without fear of fracture.

It should also represent the gingival border properly formed. To more fully explain the method of anchorage, I wish to recommend, as it has given me the greatest satisfaction, take an upper central incisor, the whole mesial surface being decayed, with little penetration toward the pulp. The cervical half of the cavity is shaped in the usual way, but instead of following the usual method of obtaining anchorage for the occlusal half of the filling by drilling obliquely into the cavity between the plates of enamel, which gives a frail anchorage, one which is liable to fracture, resulting in dislodgment of the filling, I cut a groove leading from the cavity distally to near the center of the tooth, and in some cases I cut the groove entirely across the tooth.

This groove must be made deep enough and wide enough to hold sufficient gold to give the necessary strength to stand all the force which may be brought to bear on it in the act of

mastication, and it should be made slightly deeper at the point furthest from the cavity, which will greatly assist in binding the filling in and more fully prevent its dislodgment.

Some may object to the labial plate of enamel not being protected, but by carefully beveling the cavity margin and building gold over, it will be fully protected.

Where the pulp has been freshly devitalized and the tooth healthy, the root canal offering such a place for good anchorage, would cause me to save as much of the crown as possible.

Where the pulp has been dead for some time and the tooth in a dry and brittle condition we will often do the patient better service by replacing the old tooth structure by an artificial crown.

SELF CULTURE THROUGH DISCIPLIN.

Through the difficult to the great is ever God's royal order for the individual and the race. The best things are hard to get and own. If we would have the best, we must pay the price. Cobblestones can be had for the gathering, gold and diamonds must be hunted and dug for. The worthless and choiceless lie on the surface, the choice and valuable are hidden away.

There are vast possibilities wrapt up in us. We are a bundle of possibilities. How shall we unfold? Where shall we plant? How grow great, and strong, and beautiful? These are questions far-reaching and vital.

From the acorn to the oak, from the infant mind to the mastering intellect, from letters to the sciences and philosophies, the ordained route is service and sacrifice. It was exemplified by the Master, and the disciple must be as his Lord. This teaching seems hard and harsh to the inexperienced, but as we become disciplined through struggle it is seen to be the height of kindness and wisdom. We waste a deal of useless sympathy on those who start in life without social or financial aid. The fact is, they are most to be congratulated who, at the beginning, have a rough and tough tussle with circumstances.

CRACKING COAL FOR CUTTING GLASS.—Ninety parts powdered charcoal, 2 parts saltpeter, 1 part gum benzoin and 2 parts tragacanth powder. Pulverize all finely, knead with water into dough, roll little rods from it, which are dried. Light these, pass slowly over the glass, and cause a drop of water to fall on it, whereupon the glass cracks off. To be used for cutting off glasses and bottles.

SAVE YOUR TEETH.

Prof. D. A. Ferguson, Washington, D. C.

Only few persons are aware of the importance of the teeth; in fact, they consider them of minor importance; but to do justice to the "cutters and grinders," they are as important, and should be appreciated as ranking at par with any other organs of the body.

It is absurd to say, "My teeth are worse than anyone else's. I never saw such horrid things; I wish I never had any; they are more trouble than they are worth," and many other unappreciative expressions.

Whose fault is it?

In the beginning it is the parents' fault, through negligence and ignorance; and it is also a fault of the individual after reaching responsible age. During infancy and childhood, the teeth should be carefully watched by the parents, and the child should be in care of a competent dentist. No one is happier than the parents when baby is erupting its first tooth, and no one is more unhappy than baby; but after the infant has erupted its four first little teeth (and trying to bite everything within reach) papa and mamma soon forget all about the pearly contents of baby's mouth, till at the age of five or six the little fellow awakes at night crying with the toothache. Then the first thought that comes to the parent is, "Have the acher extracted." It is true, frequently extraction is unavoidable, but they should receive such attention that extraction will only be essential to allow the eruption of the permanent teeth. The temporary teeth are guides to the permanent ones, as the latter absorb the roots of the former, thus enabling them to erupt regularly; for most irregularities are caused by the premature extraction of temporary teeth.

It should be remembered that baby's teeth can receive as proper attention as those of an adult; and it is unnecessary punishment to a child that its teeth receive attention only when they ache. Beginning at the age of four or five, and sometimes earlier, as all teeth are not alike, the baby should be in charge of a competent dentist, and then the parent or child will never regret it when the latter comes in contact with the social or business world—for, as says the old adage, "an ounce of prevention is worth a pound of cure."

Some may ask, "What's the use of all this?" That query can readily be answered by another: "What's the use of living?"

It is just as important and as necessary and as easy to keep clean teeth as it is to keep clean hands and face, because all the food we eat must come in contact with our teeth. We do not like to eat when our hands are unclean, and why should we take pleasure in satisfying our appetites when our teeth are unclean?

The principal functions are: to masticate the food, to give facial expression, to aid in rounding and perfecting speech, and to lend beauty to that conspicuous orifice. There are many other uses; for instance, the orator, to aid in his discourse; the vocalist, to aid in singing.

Indigestion and various other complaints are caused by bad teeth, or by loss of teeth. Not only those, but the eyes, nose, ears, mouth and face may become affected by diseased teeth.

We should be as particular in securing a dentist as in selecting a family physician. First of all, in an unsuspecting manner, see that he has presentable teeth, and then you will know that he will be interested in your teeth; for if his teeth are not kept in a proper condition it will be said of him, as of the shoemaker with worn-out shoes, the tailor with ragged clothes, and the minister with bad children.

As the effort of a physician is to save lives; an evangelist to save souls, so it is for a dentist to save teeth. Years ago, one could read an imaginary inscription over the dentist's door: "He who enters here leaves teeth behind." But as dentistry has advanced, the dentist can replant, implant, and transplant teeth; insert caps, crowns, bridges, plates, fillings, and can perform many other beneficial operations; therefore, by visiting your dentist at least twice per annum, you will be surprised at the insignificant amount of inconvenience and expense your teeth may cause. He will properly treat them and give you the necessary instructions.

NATURAL CLOSURE OF THE FORAMEN IN PULPLESS TEETH.
—Dr. J. Y. Crawford said that an important item in our success in filling root-canals is nature's process of closing the apical foramen by deposits from the outside. A slight soreness after the root-canal has been filled is a factor in the favorable result—an infiltration action which closes up the foramen, making it impervious to outside septic influences, though septic emanations from the dentinal tubuli may in a few rare cases have sufficient force to uncork the foramen, or even burst the tooth, as has happened.

CONDENSATION OF GOLD FILLINGS.

Dr. A. G. Smith, Peoria, Ill., in Illinois Society.

For this purpose we have live blow and dead blow hand mallets, automatic mallets, neumatic mallets, mechanical mallets, electrical mallets, nearly every kind of mechanism that can be devised to deliver a blow at all, and last, but by no means least, we have hand pressure, and it is to hand pressure condensation that we must look for deliverance from many of the evils already mentioned as being connected with cohesive gold.

Several things appear in my carefully prepared experiments which are a decided surprise to me. For instance, I had always supposed that a blow from the mallet would accomplish more in the way of condensation than a thrust of a hand instrument, though I was thoroughly sure that it was not as good for the tooth. These tests, however, show conclusively that working on the same material it requires more blows than thrusts to pack a given number of pieces in a cavity of a definit size. Also I was surprised to find that hand pressure consumed less time than with automatic.

So much for the tests outside of the mouth, but it is in practical work at the chair that all operations must be finally tested, and in this connection there are many things to be said in favor of hand pressure. By this means force can be applied in any direction with almost equal facility, and this fact alone makes the number of "inaccessible" cavities very small indeed. When we become accustomed to hand pressure, there are no cavities in the mouth easier to fill than those in the distal surfaces of the superior cuspids, bicuspid, and first molars. Work on the incisor can be done from the inner or palatal side with the greatest ease both to patient and operator, as the chin does not interfere with the plugger handle, even when the mouth is partially closed.

Large buccal cavities on the molars (especially those on the third) are almost impossible to reach and fill with any instrument which depends on a blow for its efficiency, for whatever the shape of the plugger point may be, the force of a blow at the end of the instrument must always travel exactly parallel to the long axis of the handle or shaft; it is thus impossible, in many instances, to properly pack against a buccal or an anterior wall, when the cavity is situated far back in the mouth, with any mallet with which I am acquainted. Again, in hand pressure the sense of touch is not benumbed and partially paralyzed by a heavy and cumbersome instrument, as with the automatic

plugger, or by any rattling or clattering vibration as with many of the other forms. An important point in all gold fillings is to get them condensed evenly, and there is no way of getting information with regard to how far we have carried our condensation except through the sense of touch. We condense a filling till it feels hard enough, and we feel that it is time to add the next piece.

The lighter and more rigid the instrument with which we feel, the more accurate is our information sure to be. Who would tolerate a handle of the size, weight and looseness of an automatic plugger on an excavator or chisel? Such an instrument would be the laughing-stock of the profession should any one try to put it on the market. Who would try to prepare a cavity margin with an instrument vibrating and chattering about as do the electrical, neumatic and mechanical mallets? Surely no one. Would we not say that such instruments as these were far too clumsy for such accurate and delicate work? Yet if there is one thing that we need to do more accurately than another it is to perfectly adapt our gold to the margins and walls of the cavity we have made.

I believe that cohesive gold is now in far more general use than the older soft variety. I have yet to see the cavity that it was possible or desirable to fill with gold at all, that, to my mind, could not be better filled with cohesive gold than with soft gold either alone or in combination with cohesive. While there are comparatively few fillings now made entirely of soft gold, many operators still cling to it as of peculiar and almost supernatural efficacy in starting fillings and in "protecting" the cervical margin. (I might remark right here that in the term "protecting the cervical margin," which is in such universal use, is a very happy one, as most of the cervical margins we see are in dire need of "protection" of some sort.) There are reasons for the preference shown soft foil in the two places mentioned, namely, its easy working properties, the rapidity with which the starting of the filling can be accomplished, and the general wholesale manner in which the cervical margin can be "protected" and the deepest and most inaccessible portion of the cavity filled, placed out of sight, and disposed of.

Of course there are cavities which have no cervical margins and practically no inaccessible portions. I refer to the box-like cavities having four walls, and these are the only cavities where fillings made entirely of soft foil are now, I believe, ever advised; but even in these simplest of all cavities I still think that cohesive gold is far the better material to use.

We are all familiar with the soft gold fillings in crowns and buccal surfaces of short yellow molars, that have been in, so our patients tell us (and I have not the slightest doubt that they speak truly), "ever since s'teen years before old Dr. So-and-so died, who was a fine dentist, but awfully rough." These fillings have done great service, and all honor to the men who put them in; but how about it when we come to proximal cavities in the bicuspid?

There are few practicing dentists who have not had to remove gold fillings from these cavities; and in so doing, how often do we take out of the grinding surface a hard nugget of cohesive gold, and then from the cervical third of the cavity dig out a mass of soft gold that seems to be somehow disintegrated and like so much yellow sausage. Again, how often have we seen soft gold fillings that are battered out of shape, rough, uneven, pitted, discolored, and a disfigurement to the tooth. The cohesive filling is more dense, is harder and wears longer, is susceptible of and will retain a higher finish than soft gold ever can.

The objections to the use of cohesive gold are chiefly its difficulty of manipulation, length of time required for its insertion, necessity of keeping the tooth perfectly dry during the entire operation, the alleged difficulty of making a good adaptation to the cavity walls, expense and discomfort to the patient. Were it not for these few objections, cohesive gold would be almost the only material used for filling teeth to-day.

Unquestionably it often is a difficult matter to start a filling with cohesive gold, that is to get the first few pieces firmly anchored in place. Especially is this true if we try to make the start with foil and the cavity happens to be one where we can see nothing except in the mirror. Happily we have cylinders, mat and sponge gold to help us out of this difficulty. These are all true forms of cohesive gold, but owing to the peculiar properties imparted by the processes of their manufacture, can be gently thrust into the cavity where we can coax them into undercuts and retaining grooves and condense them at our leisure. I use very little mat gold, and never depend on it for any anchorage strength, simply a very tiny piece at the start for the purpose of saving time. Any filling may be started with cohesive foil, if our skill and patience are adequate.

In connection with the sanitation of armies, experiments made with large bodies of men show that they are better able to endure the fatigue of hard marches when not allowed alcohol.

RECENT DENTAL PATENTS.

John A. Saul, Patent Agent.

599850, Head rest, Albert E. Larrabee and J. I. Banks, Bristol, Pa.

600213, Fumigator, Otto Andreae, Central Valley, N. Y.

600135, Electrical surgical engine, Arthur W. Browne, Prince's Bay, N. Y., assignor to S. S. White Dental Manufacturing Co., Philadelphia, Pa.

600257, Dental separator, Courtland G. Capwell, Boston, Mass.

600243, Angle attachment for dental hand-pieces, Henry Case and E. D. Shaw, Gloversville, N. Y.

600211, Apparatus for washing amalgam, Henrik C. F. Stormer, Christiania, Norway.

28345, Design, tooth support, Norman Stafford, Canastota, N. Y.

TRADE-MARKS.

31299, Dental cement, Adolf Abraham, Berlin, Germany.

31300, Disinfectants, Samuel B. Allison, New Orleans, La.

31341, Magazine devoted to the interest of the dental profession, Consolidated Dental Manufacturing Co., New York, N. Y.

COHESIVE AND NON-COHESIVE GOLD.

Prof. C. N. Johnson, Chicago, in Illinois Society.

Nearly every essayist, and dental manufacturer, in designating different kinds of gold, call it "soft or cohesive." I believe one of those terms should be left out of our literature, and that the terms should be definitely "cohesive and non-cohesive." I am sorry that this term "soft gold" sticks to the literature of the profession. It is not a definite term; it does not convey what the essayist wishes to convey. The dental manufacturers have almost forced us to continue these terms by placing them on their product. We may have a gold which is to all practical purposes soft, and still it may be cohesive. Cohesive gold is softer than non-cohesive. You take a piece of plate gold and anneal it, make it soft; the same with a piece of foil gold; you anneal it, and that foil is softer than it was before. The reason that the terms soft and cohesive were used is because a pellet of annealed gold is more "sticky" under the plunger and the mass is not so easily manipulated by pressure as the non-cohesive. But the

term soft is a wrong one, and I am in hopes the profession will discard it in the new nomenclature. We have been indefinit in our phraseology and have not conveyed the meaning we wish to convey on account of this indefinitness.

As to the use of non-cohesive gold along the cervical margin, as advocated by many members of the profession, it is used in such a place, not so much because we cannot get adaptation with cohesive gold, but because in placing a layer of non-cohesive gold and condensing the cohesive gold on it, we have a cushion for the cohesive gold to be condensed on, and can mallet over that part of the filling with less danger of injuring the enamel margin than we could if we started with cohesive gold and began our condensation in the early part of the operation. That small piece of non-cohesive gold serves as a cushion to protect the margin from injury from the malleting force. We do not want to use much non-cohesive gold in building up proximal fillings in molars and bicuspid. The only non-cohesive gold I use is the first layer. From that point up I use cohesive gold on account of its greater density.

SECRETS OF LONGEVITY.

Three thousand men and women over eighty years of age in one State have been asked by a newspaper man the secret of their longevity. Of the three thousand, one-third were farmers, and all of the others, both men and women, had followed some profession or trade which required them to observe regular hours and to spend most of their waking time out of doors. They were of all ranks, but not one, even of the wealthiest, had led an idle, luxurious life. Of the great majority, their cares were great, and their labor, up to seventy years, heavy. But in every case they had plenty of fresh air, and their habits were regular.

Of course, long life should not be the great aim of life. Some of the world's most happy, useful and influential lives have been short; and some of the longest lives have been monotonous, useless and insignificant. Mere existence is a cipher that means nothing without a significant figure before it that stands for something worthy of life. Deeds, not years, measure true living.

And yet, that man who wantonly breaks the laws of his physical life is a criminal, and, though slowly, he is committing suicide. If he recklessly spends his physical energies, he is probably no more careful of his morals—all are thrown away in frivolous gratifications.

AN ASEPTIC TABLE COVER.

Dr. Walker uses as an aseptic covering for his bracket table a sheet of rubber-dam, which is removed with the instruments and for each patient, and sterilized with them by boiling for five minutes in water to which soda has been added. The soda not only prevents rusting, but it is an antiseptic in itself, and it also raises the temperature of boiling water, thus increasing its germicidal powers. The instruments are placed in a perforated tin vessel—a “cream-cheese mold”—and submerged in the boiling soda-water for five minutes. Hand-pieces after being thus boiled are laid for ten minutes in a vessel containing alcohol. This prevents rusting, and also cleanses them perfectly from all gumminess, etc.

The rubber-dam cover is not injured in any way by repeated boilings, a sample which, as a test, had been boiled over thirty times,—once, when forgotten, for over half an hour,—being as strong and elastic as a new piece of rubber-dam. The color of the rubber-dam is not trying to the eyes and does not reflect the light; the velvety surface is pleasant to the touch and is noiseless when steel instruments are laid on it. It does not absorb warmth from the instruments, is not injured by acids, and obviates the danger of contamination from laying the instruments on the felt top of the bracket table.

THE DENTISTS OF PEORIA.—Dr. A. G. Smith says: Among the dentists of Peoria there is the broadest spirit of courtesy and liberality manifested. I think, without exception, the young men of this town are endeavoring to the best of their ability to refrain from any questionable practices whatever. In our societies and colleges a young man's professional position is determined largely by the individuality within him. I do not think we can educate a man who simply wants to make a tooth-puller out of himself. There is no use in wasting time on him. The societies are a continuation, so to speak, of the colleges. We are almost bound to get into a rut unless we become members of a society. We read reports, but non-members do not receive the benefit that those do who come to these meetings and listen to the most eminent men, who have given time, study and attention to the particular subject in hand—men who have spent weeks and oftentimes years in their investigations, and give us the mature fruit of them.

CURRENT THOUGHTS.

ANCIENT MARINE LIFE.

Prof. Charles H. Ward, Rochester.

Before the land was ready for the invasion of animal life, the shallow, wide-reaching oceans swarmed with living organisms. The tiny protozoans, first voyagers of those primeval seas, have left a monument of their numerical greatness in the chalk cliffs of England, a monument composed of the remains of *Foraminifera* so minute that a cubic inch of the chalk has been estimated to contain more than a million. Yet their fragile shells built up deposits measuring in places a thousand feet in height, and extending from the north of Ireland to the Crimea. Beside this gigantic tomb the pyramids are but grains of sand, yet the pyramids themselves are built of Nummulitic limestone, a formation of great thickness, in some places nearly two miles thick, that stretches from France to China. The Nummulites (from which the rock derives its name), escaping from their matrix, have strewn the bases of the pyramids (and the plinth of Cleopatra's Needle, in Central Park as well) with little round fossils, which Herodotus naively described as fossil beans, remains of the prehistoric meals of their forgotten builders. Now, these hundreds of leagues of strata contain, almost exclusively, not beans, but *Foraminifera*. As tending to modify our oftentimes too specialized conception of the parts necessary to an animal, it may be well to note that of all that vanished host of ameboid organisms which "lived, and moved, and had their being" in those far-off geological epochs, not one possess that apparently essential organ, a mouth!

The lot of the marine protozoan is, from the human standpoint, easy. Living in a fluid medium, its food is brought within its grasp in an already comminuted and macerated condition, the craggy coastline against which the troubled waters dash playing the part of teeth for myriads of fragil forms. And water, our universal solvent, by its softening and disintegrating processes, furthers this dissolution, producing in a simpler way the same result as do the most complex of digestive apparatuses, namely, a solution.

HABITS OF SPONGES AND CELENTERATA.

Turning from these simple unicellular forms to the more complex Betazoa, we find the sponges and celenterata subsisting

on water-borne rations, wafted into their body cavities by scores of eager, waving arms. Living as they do in a sort of diluted broth, but little exertion is required to obtain food, and accordingly whole communities of these lowly animals actually take root, in the comforting assurance that "all things come to him who waits." The progeny of these rooted forms are commonly born free swimmers; as, for example, the young sponge or hydroid; but after a brief "grand tour" the former settles down, after the manner of his ancestors, while the latter, disdaining so tame an existence, yet begets offspring who, strangely enough, inherit their grandparents' form and habits with astonishing regularity.

GENESIS OF LOCOMOTION.

The necessity of a proteid diet, however,—*i. e.*, of a food supply consisting of the bodies of other organic beings, animal or vegetable,—eventually forced many animals into motion. Hunger was undoubtedly the genesis of locomotion, which latter is the price we pay for a proteid, and therefore scattered, diet. And all the myriad devices whereby the animal creeps, or swims, or flies—the sperm whale sweeping with pendulous mandible the floor of shallow oceans, the albatross poised on tireless pinions far above the rolling waves, the gorilla swinging lazily from branch to branch of tropic forests, the serpent gliding stealthily through the tremulous grasses—all these diverse methods of transportation are the effort for food supply. All higher animals possess this essentially ennobling attribute of voluntary motion, and it may be accepted as a truism that whenever a form, be it worm, fish or man, attaches itself permanently to the food supply as a parasite, that form degenerates.

Cosmos.

AMERICAN EXTRAVAGANCE.

It is not a new thing to say that the Americans are the most extravagant people in the world. It is a fact recognized everywhere but in the United States; there they look on themselves as rather economical and self-denying. People's ideas of extravagance vary much. Some think that if they spend every cent on things they covet or deem a need, short of going into debt, they are as careful as it is necessary to be; while others look on everything that is not necessary as a reckless extravagance. The latter class is somewhat rare among native-born Americans. Those holding this opinion will chiefly be found

amid the foreign population. Webster defines extravagance as the "act of wandering beyond the proper limits," being "profuse in expenses," and "wasteful." These questions instantly arise: What are the "proper limits?" When do expenses become "profuse?" When "wasteful?" In the minds of many of the nation's friends across the water, most Americans go in most things beyond the proper limits; but it is not so often the case as they imagine. We are a wealthy and generous people, and to spend freely is not always extravagance. Owing to our wonderful resources, it is much easier to earn a dollar in America than in any other country, so we are more readily tempted to spend one. Where land is so abundant and productive, conditions cannot be so hard or poverty so widespread as in older lands.

Ian MacLaren speaks of the largeness and generosity of our people as being an outgrowth of the vastness and bountifulness of the land in which we live; but, however that may be, it is not the cause of our extravagance, in any great degree. The cause lies more in our unsettled social conditions. We have no class distinctions, that is, we do not recognize any officially. Everyone is variably engaged in the struggle to reach the top, or, if not the top, as high as can well be reached. The only path to eminence, recognized by the vast majority, is in spending money, in building fine houses, in acquiring fine furniture or fine clothes, and in giving ostentatious entertainments. Almost everyone lives to the full extent of his means, and thus wanders far "beyond the proper limits." Whatever our income is, a large margin should be put by for the rainy day, which is sure to come in every life; unless this is done, a man cannot be living on any firm basis of self-respect. If this is done, he must know that he leaves himself in a condition to become a burden on some of his fellow-beings, thus doing them a great injustice. Yet, in the struggle for social position, this happens continually; little is saved, and nothing is laid by.

The race, we boast, is open to all; the washerwoman's son is just as likely to be the leading man in town as the banker's son—if he can make money enough to build a handsome house, dress his wife and children stylishly, and entertain sumptuously. It is what might be called the salaried class that are the greatest sinners, as they are the chief sufferers through extravagance. As long as they can live as their richer neighbors do, their social position, they think, is assured—always provided there is some fitness for that position—so everything goes to maintain that status in society. Reverses are sure to come where instability

is the rule, as in a new country. A railroad or an incorporated company changes hands, many of the office men, from the highest to the lowest, lose their places, and, for a time, are out of employment. Most of them have lived up to the last cent of their salaries—surely a fatuous extravagance. As a result, they pass out of sight, and have to begin again at the foot, to struggle for a bare living—often, for just enough to eat.

Anyone can look around and see constantly occurring examples of this.

It is pretty much the same in all other occupations where men receive salaries and are not in business for themselves; they are liable to lose the salary at any time. Men who are in business for themselves frequently fail, because, before success warrants it, they are living in great style to win a social position—another fatal mistake. Those who are wealthy, having assured incomes that do not depend on salaries or business ventures, are really apt to be more prudent than those whose means are precarious. This is a singular fact, not easily to be explained.

Again, we are profuse and wasteful in our food. We buy too great a variety; we must have a number of extra things for each meal, simply because other people do, not because we particularly want them ourselves; there must be a continual change throughout the month; this change, in many cases, must include all kinds of delicacies, cakes, pies, sweetmeats, exotic fruits and other luxuries that involve a waste of money to purchase or of time to make—a worse than waste of time to eat; for such food often only gratifies the palate; it supplies little nutriment to the body. Frequently, indeed, it develops a race of confirmed dyspeptics or ill-conditioned and failing hypochondriacs. To this unwholesome regimen is usually added excessive quantities of meat;—scarcely anywhere else do the people eat so much meat as we Americans eat;—this is also expensive and unhealthful. Of all this food enough, we know, is thrown away to keep a second family. This extravagant mode of living is all but universal, and this not only among the rich, but among people who have salaries of not much more than a thousand a year. They are all “wandering out of the proper limits,” but it is so customary that no one seems to recognize the incongruity of it, or to confront the limitations of one’s salary with one’s style of living.

Besides the living expenses, comes the dressing in a corresponding style. The man must have half a dozen different suits; madame must have silks, laces, jewelry, and feathers. When she turns out on state occasions, she must do credit to

her position, and, wherever the money or credit comes from, dress and look as fine as a princess. Of course, we Americans are all kings and queens in our own right; but it is difficult, and often rather trying, to keep up royal state on a thousand dollars a year! We are all trying to do it; the strain on some of us, however, is fast sapping the foundations of life. It would be well to forget our royal state; to set up a standard for ourselves; and to live—not as others are doing,—but according to our incomes; saving, at least a fourth every year. We should place on our tables food that is simple, nutritious, healthful; to dress in suitable materials comfortably, though neatly and tastefully; to entertain hospitably, not in a grand reception once a year, which exhausts our nerves and depletes our pockets, for the time being, and in which the only satisfaction comes in the remark: "I'm glad it's over, now all my indebtedness is paid up." The time and peace of mind gained by a little independence, would go a long way in helping us to that culture of mind and heart so essential, yet so often neglected, for the graver and more elevating things in this world.

Caleb Clark in Self-Culture.

SYMPOSIUM—TREATMENT OF CARIOUS PROXIMAL SURFACES IN BICUSPIDS AND MOLARS.

Dr. Belyea had sent the following questions to the dentists whose replies follow:

(a) How would you treat carious proximal surfaces on bicuspids and molars?

(b) How shape the cavities? Would you conserve or sacrifice tooth-substance, and to what extent?

(c) What materials would you use in filling?

(d) Would you use a matrix; if so, what kind? If not, state your objection.

Dr. Chas. L. Johnson, Pittsfield: (a) If the carious surfaces were very sensitive, or the dentin soft, I would adjust the rubber-dam, dry with hot air, remove the decay and fill with a mixture of oxiphosphate two-thirds, and hydronaphthol one-third, for six months or so.

If the tooth was reasonably hard and not too sensitive, I would insert a permanent filling without further treatment.

(b) I would make the cavity occlusal as well as mesial or distal; would cut the vertical walls back to such a position that the juncture of the filling and enamel edges would be kept clean

by the natural motion of the tongue and cheeks; would cut the cervical wall down to such a position that the juncture of filling and enamel would be overlapt by the gum.

(c) I believe the most permanent and best filling to be made by using tin and gold for a cervical border; if the cavity is very deep, would put in a capping of oxiphosphate two-thirds, and hydronaphthol one-third, completing the filling with gold foil, contoured to as near the natural shape of the tooth as possible.

(d) I believe in the use of a matrix, and like the double screw matrix designed by Dr. W. A. Woodward.

Dr. William Barker: (a) The age and sex of the patient, as well as the character of the teeth,—*i. e.*, whether soft, deficient in mineral constituents, hard and dense, or friable and brittle,—would all be factors to be considered in determining the treatment of the cavities. In such cavities in the mouths of patients under twenty-two or twenty-three years, unless teeth of the first class with a good inheritance behind them, or in small cavities, alloys containing some copper, gutta-percha, and zinc phosphates would be employed. Very little gold should be employed in these cases, the expectation being entertained that at the age above indicated the teeth would have become sufficiently organized to wisely admit gold to replace the other.

(b) Where cement is employed or gutta-percha (under which a good antiseptic and adhesive varnish should be used), tooth-structures should be sacrificed very sparingly. When metallic fillings are demanded, cavities should be so shaped as to mechanically retain the filling without dovetailing. Margins should be cut back to form strong ground, and contour be as fully restored as possible.

(d) Where I had ample room I would not employ the matrix; the percentage of such cases is not large. I prefer a band matrix as a rule. I make them myself: a simple strip of metal, copper, silver-plated on one side, cut to proper width and long enough to embrace the tooth inside of the two holes, one at each end. Through these holes a small bolt or screw is past, and with a nut on one end the band may be made to embrace the tooth as tightly as desirable.

Dr. J. W. Rider, Danbury, Conn.: (a) I should separate thoroughly for filling.

(b) I am conservative in my treatment of tooth-substance, removing, of course, all defective enamel, but do not believe in sacrificing, providing always that firm and well-supported margins can be gotten. With the original point of decay removed

and replaced with a well-contoured filling,—*i. e.*, a filling compatible with normal shape and condition of the tooth,—the danger of a future attack is not sufficient in at least ninety per cent of cases to warrant sacrificing unnecessarily any sound tooth-substance; certainly not in the promiscuous robbery advised by some.

(*d*) The matrix, in my opinion, is universally a “delusion and a snare.” In the hands of the incompetent and careless operator it is certainly a vile and treacherous contrivance, while to the competent it is practically useless.

Dr. J. G. W. Werner, Boston: (*a*) Always restore carious proximal surfaces in molars and bicuspid to full, or, in many cases better yet, to a little more than full contour.

(*b*) Flat base, cervical wall beveled, lingual and buccal walls beveled with little or no undercut or grooves, an anchorage step, and in all but the best teeth rather sacrifice than conserve tooth-substance.

(*c*) Would use gold—soft gold at the neck and all but the last or occluding portion, where I would use gold and platinum, and in some cases gold and tin at the cervix.

(*d*) Would use a steel matrix.

Dr. G. A. Bowers, Nashua, N. H.: I shall include only the upper bicuspid in my reply. A similar treatment, however, answers for the lower bicuspid and all molars. The upper bicuspid are the most vulnerable teeth of the permanent denture. I fancy seventy-five per cent of the operative procedures are performed on these teeth. Owing to faulty manipulative skill or a lack of conscientious treatment early in life on the part of the dentist, they are either sacrificed or covered with a crown, and generally a gold crown. Frequent examinations, conservative treatment, and conscientious work must be the rule from their eruption. If they are early prone to decay they should be filled with cement or gutta-percha. Watch them closely, renewing the fillings, if necessary, till the patient is about twenty. At this age, if they are of good structure, they can be permanently filled. When a bicuspid is artistically filled, bringing out the beautiful lines and contour, it is a sure criterion of a good dentist.

In the cavity preparation use the chisel freely, never hesitating at sacrificing tooth-structure to accomplish your desired result. Extend the cavity cervically, and beveling so that the gum will come down over the finished filling. The seat of the cavity should be practically flat, with the buccal and palatal grooves extending and rounding into it. A wedge-shaped re-

tention is supplemented in the sulci. Finally, see that your margins are well defined and sharp. A good chisel will do this. Do not use strips or disks, for you will invariably get a rounded edge, and therefore a slivering of the gold at that point. I should always use gold if I could get my pay for it.

I think it is perfectly safe and good practice to use a matrix. I almost always, however, fill the cervix, first burnishing and finishing it. Then apply the matrix and complete the filling. I use Woodward's matrices more than any other, numbers 6, 7, and 8. For special cases, where these are not suitable, I cut them out of matrix metal and contour them. They can be kept in position with a clamp or orange wood.

Dr. William H. Carpenter, Providence: Presuming the teeth in question are suitable for restoration by filling, I use for that restoration gold contour work with the aid of matrix. I fully believe that a good operator can get the best results (those most resembling nature and hence nearest to perfection) with soft gold cylinders at the cervical wall and two-thirds the way up toward the grinding-surface, continuing toward the top with semi-cohesive and finishing with cohesive gold, or, where the surface receives too much attrition, with gold and platinum (rolled), No. 60. In very poor tooth-structure I sometimes use at the cervical wall a few pieces of gold and tin, No. 3, folded together and lightly rolled into cylinders.

The matrix must be used. It simplifies the operation greatly, and produces, I think, the only perfect filling. The matrix may be of any kind the operator prefers, provided it is of steel. I use cold rolled steel very thin, and shape and fit one to suit each case, holding it with either gutta-percha, cement, separator, or whatever I think best suited to a nice gold contour needing but little finishing on the proximal surface, most of which can be effected with the burnisher.

I do not believe in sacrificing tooth structure to prevent margins from touching, for this can be prevented by obtaining a little extra space and then bulging the filling sufficiently to hold the margins away from each other. I believe that no flat surfaces should exist. The surfaces should represent segments of two circles. The cavity should contain no grooves or pits if it is possible to prevent them. The matrix should be kept in place till the last piece of gold has been introduced. *Cosmos.*

A caterpillar is so greedy that in one month it usually devours 6,000 times its own weight in food.

MIXING AMALGAM.

Dr. I. N. Crouse.

It is very essential to have the proper proportion of mercury and amalgam when you commence mixing. Two ways have been suggested for doing this. One is to weigh out the mercury and amalgam and put them in capsules, so many grains of amalgam and so much mercury to go with it. This method is objectionable because too complicated. The other plan is to have a scale with which the assistant can soon learn to weigh out a sufficient amount for the size of cavity. You soon are able to gauge accurately the number of grains of amalgam that are required to fill the cavity. Be sure to have enough mercury, so as to mix the amalgam to its proper consistency. All amalgam should be mixed softer than many operators think. Some have their amalgam too dry and they do not stand the stress. An amalgam that will stand a stress of from 350 to 450 pounds, if mixed dry will break at 80 or 100 pounds. The mixing of amalgam is so important that it is much better to have it too wet than too dry. There is also such a thing as wringing it out drier than it should be. If it is too dry it begins, to powder and harden before it is in place. I have adopted the method of having it moist, and then take some dry amalgam and incorporate with it.

Review.

IMMEDIATE INVESTING MATERIAL.—A nice and convenient way to make an investment for soldering, is to take a small quantity of asbestos fiber, place it in a dry rubber bowl and incorporate with the fingers as much of Teague's impression material as the asbestos will take up. Moisten the compound as you use it, and shape the investment with the fingers as desired, around the piece to be soldered. The investment becomes hard immediately on being heated, and does not change its shape. Plaster will not do as a substitute for Teague's material, as it changes its shape on heating, even when mixt with asbestos.

In using to invest pieces of work held together by wax, the wax should always be removed by warming the investment and picking it out with the point of a suitable instrument. Hot water poured on the investment softens it on account of the asbestos fiber absorbing the water. Porcelain faces can be invested with this mixture and dried out immediately with the flame of a blowpipe without the danger of cracking them.

H. R. J., in Amer. Dental Weekly.

CARE AND TREATMENT OF CHILDREN'S TEETH.

J. W. Paul, D.D.S., Minneapolis, Minn.

There are many reasons why the teeth of children should have the best of care that can be given by parents and family dentists, for I believe that it is just as necessary that every family should have their dentist as physician, and that by having a dentist to look after the teeth of the members of the family, prevent many ills by the prompt relief which he can give.

A man who was suffering from an abscessed tooth was treated by a prominent physician for abscess of the glands of the neck. He was put to quite an amount of expense and pain with only temporary relief. Parents should qualify themselves so as to be able to instruct their children in the care of their teeth, such as the proper sanitary care of the teeth and mouth and the timely removal of the temporary teeth. This last should be with the advice and assistance of the dentist. Many parents cannot distinguish between the temporary and permanent teeth. Especially, they mistake the six year molars for temporary teeth. Temporary teeth are allowed to remain in the mouth long after they should be removed, to the detriment of the permanent set, causing crowding and disalignment and consequent non-articulation. It is sometimes found necessary to remove temporary teeth which have not become loosened by the process of absorption. I have found portions of temporary teeth in the mouths of patients eighteen to twenty years of age wedged in between the permanent teeth. In many children between the ages of two and six I find caries of the teeth. If decay is superficial I apply a remedy to cauterize the surface, which many times is sufficient to prevent further trouble. If the decay is deeper, the enamel and dentin softened, I apply carbolic acid, dry, as well as circumstances will permit, and fill with cement. If the enamel is firm and retaining shape is easily accomplished, I fill with amalgam. If decay has progressed so far as to involve the pulp I sometimes devitalize, remove, and fill the tooth. If the pulp is dead I cleanse cavity, wash out very thoroughly, remove as much of the pulp as possible, apply disinfecting agents, and without attempting to thoroughly fill root-canals, fill the tooth. Much of our work with children must be palliative, not to attempt long operations. There should be no gold fillings in temporary teeth and few in the first years of permanent teeth. A dentist to be successful with very young patients must have much tact and kindness of heart. A child quickly learns to discriminate between

professional urbanity and disinterested sympathy and gentleness. If the confidence of the child is once gained it will bear a surprising amount of pain. I think the mistake is made of trying to do too much at one sitting, tiring the child and causing it to lose courage by the long endurance. Better short operations and often. A child should be taught the use of the brush as early as possible, and continually admonished to use it till it becomes a necessity. I believe an examination of the teeth of the children of the public schools as often as once in a year is as necessary as the examination of the eyes.

As dentists we have a duty to perform in advising, admonishing and aiding in every way that we can till these little sufferers will learn to appreciate the benefit we do for them.

Review.

THE LAW OF SIMILARS.

M. R. Harned, D.D.S., Rockford, Ill.

When Hahnemann promulgated his great law of nature *similia similibus curantur*, his evident view of the subject was limited. Limited to the idea of cure of what was sick; and while this principle is large enough to found a great school of medicine on, the really great law of similars is infinitely greater, and is the law by which "like attracts like."

Like attracts like because it loves like, and this love or affinity is the great centralizing, life-giving force in nature which perpetuates species, distinguishes races, crystallizes families into homogenous masses which are the nuclei known as the home, that great potentiality which is the foundation of our civilization, social and economic, politic and religious, individual and collective.

In the mineral world this law has given us strata of limestone, of sandstone, of granite; it has given us beds of coal and iron and copper, quartz laden with gold, silver and platinum.

In the vegetable world it has given us the great forests of pine and spruce and fir; of oak and hickory and ash; of magnolia and orange and pepper. It has given us meadows of clover and timothy; plains covered with buffalo grass, cacti and sage brush; fields grown to daisies, poppies or thistles; patches of cowslips, buttercups or violets. And each in specially favored spots known to us as their homes.

In the animal world it gives us the droves of buffalo, the herds of cattle, the flocks of sheep, the bevvies of partridges, the coveys of quail, and the shoals of fishes.

In other words, this law of similars is the law of selection, and so strong is it that, while the shark may be found in a shoal of cod, it is immediately recognized as being there for no good to the cod, and while we still hear of the wolf in sheep's clothing, all instantly recognize it as a menace to the sheep; and we do not expect to gather nuts from maple trees, apples from gooseberry bushes, figs from thistles, nor grapes from a pumpkin vine, but each in its own special habitat and among its kind.

In the human family it is the cord which, struck, reverberates throughout the race, the great law known as harmony; harmony throughout the simplest and the grandest of melodies, and yet this law of similars, of selection, of harmony reduced to simple language is, I like, I love, I want, and the echo comes back, I like, I love, I want, and the selection is made.

Some enjoy business bustle and select a bustling business; and if we allow natural inclinations to dictate, this law of similars chooses our trade, our profession, our labor and all employment is adjusted to this law, but, unfortunately, we are sometimes led to go contrary to it and the friction that follows leads to much of the catastrophe of our commercial world; lives are wrecked, families broken up and communities scattered by disobeying this law. * * *

You want nice clean patients; the way to get them is to make them so. If your office is clean, if your instruments, linen, etc., are clean, and most of all, if you are clean, the idea is infectious and the patient takes the hint, and it will make a noticeable improvement in his appearance the next time he comes, for all are sensitive to these little things. Especially will he notice how your teeth are kept and if your breath is tainted by beer, tobacco or uncleanness, or odors disagreeable of any sort. If we are thus particular about ourselves we are apt to be enthusiasts, and there is nothing that spreads like enthusiasm, and every dentist should be an enthusiast. If he enjoys his work and takes pride in it the patient may not thoroughly enjoy operations but will enjoy results and take pride in keeping the work in the best possible condition. * * *

Our patients come to us through personal acquaintance or advice of acquaintances and will be according to law of similars. They select us because of existing sympathies, because of similar inclinations which seem to harmonize with their needs; hence if we want the best of patients let us be the best in skill; best in care and sympathy; best in helpful advice; best in disposition (and do not forget the smile); best in our equipment for doing our

work; best in our personal attractions, mental and physical; best in our inclination toward our patient; best in our habits of thought and living, and we will not only have the best of patients, but we will have the best of our patients, and will, therefore, be able to render the best equivalent for our remuneration.

Let us all look forward to the ideal, a time when dollars will not be our only remuneration, when our economic system shall be so adjusted that all will have what they need (the advice and assistance of the dental profession), that the profession will have much more to give to the public and give it freely. * * *

Let us, as members of the dental profession, be so permeated by the law of "I want" and "I give," so stirred by enthusiasm, so in love with harmony, that we will unite our varied elements to make up a grand symphony that will be worthy of a place on the great program of human progress. *Review.*

ADAPTING ARTIFICIAL DENTURES.

Dr. A. O. Hunt, Chicago.

After a denture has been worn for a long time with only a partial antagonism with a few apposing teeth, the difficulties are multiplied. So also when the mouth is edentulous and no denture has been worn.

When the best model obtainable is at hand, a careful digital examination should first be made of the surface of the mouth, to locate and define the depth and form of the soft spaces within the area to be covered by the plate. These spaces and their form and depth should be outlined on the model, the depth indicated by figures, as it varies greatly in corresponding locations in the same mouth.

The model should then be scraped away in the various places to the proper depth, so that the denture will bear evenly over its whole surface, keeping in mind that the central or palatal portion will not change materially while the alveolar ridge is constantly changed by resorption.

For the upper jaw there are five localities where the denture will find a firm and reasonably permanent rest without excessive pressure on the parts, namely:

The palatal surface, two on the labial surface immediately over the region occupied by the cuspids, and two over the malar processes extending to and above the maxillary tuberosities.

For the lower jaw there are four localities for a firm rest for the plate, two on the labial in the region of the cuspids and

two on the posterior buccal margins between the summit of the alveolar ridge and the attachment of the buccinators to the inferior maxillary. The greatest interference in retaining a denture in its place, as they are usually constructed, consists in the action of the muscles on the margins of the plate to push it either up or down, or oftentimes the posterior margin of the upper one extends on the soft palate and is thrown down by its movement; or in the lower denture the posterior ends of the plate are so long that in opening the mouth the stretching of the tissues in front of the ramus move it forward.

While all the muscles may throw a denture out of position, yet by a proper form of the margins, some of them may be utilized as the most important force for retention; notably the buccinators and the orbicularis oris.

A careful examination of the attachments of these muscles should be made, and in shaping the margins their movement should be opposed to each other in such a way that they will be comprest on the denture and hold it firmly.

If improperly made the patient never gets the use of dentures till they learn to hold them in place by the buccinators assisted by the tongue and the orbicularis oris.

With an even pressure over the entire surface of the plate in contact with the mouth, a free movement of the anterior frenum and the anguli oris muscles, the anterior border of the buccinator, the compression of the buccinator at the posterior borders and the compression of the orbicularis oris at the anterior portions, a free movement of the lingual and sub-lingual muscles on the interior surface of the lower denture, with plenty of room for the tongue, accompanied with a stable pressure on the hard or permanent parts of the mouth will produce a perfect adaptation and retention of an artificial denture.

Review.

Getting out of temper is one of the worst faults a dentist can have. It is foolish, dangerous and generally costly. When the cause has faded away, how weak, inconsistent and indefensible we appear, even in our own eyes. How we would like to recall our words, excuse our weakness and make amends for our passion; and when we see how much it has cost us, we feel like punishing ourselves. When angry it is much better to hold our tongues; it is still better not to have any anger to hold. Getting angry is mostly a habit; we may as well get into the habit of being good-natured.

HOW THE SURGEON LOST HIS FEE.

A famous Vienna surgeon was asked, by telegraph, how much he would charge for a capital operation on Reb Chaim Rosenbaum, a young, promising merchant in darkest Polish-Russia. The reply was that 5,000 gulden (£400) would be a fair compensation for the job. After various negotiations it was agreed that the desired amount should be paid after the operation was performed. The surgeon left sunny Vienna at once to emerge, after a thirty-six hours' journey, in the garlicky atmosphere of a small Polish town. There he was met by a congregation of long-bearded and long-coated individuals with long faces, who explained that the life-saving professor was too late this time, and that good Reb Chaim Rosenbaum was gathered to his fathers the previous night. The surgeon's disappointment was so much greater as the mourning survivors did not show any willingness to pay his expenses. He concluded, however, to take a day off in the town. The population heard of the presence of the celebrated surgeon, and it was not long before he saw himself surrounded by a crowd of surgical cases.

He was kept busy operating the whole day, receiving fees of 50 to 100 gulden from each patient, so that, while not getting the stipulated 5,000, his trip was not a dead loss. When on the following day he was entering his train to return to Vienna, an old Polish gentleman most politely approached the professor, wishing him a lot of good things, praising his skill and many virtues, and finally saying that the whole town was forever under deep obligation to him, and to show his everlasting gratitude he would confide a secret to him. The professor could do no better than to listen, and great was his surprise when he heard the following confession: "Don't you know, dear professor, that there is some mistake about Reb Chaim Rosenbaum's premature end, and that, in fact, he found it preferable to stay with us instead of being gathered to his fathers? Among the many patients you operated on yesterday you also operated on Reb Chaim Rosenbaum, and, God bless you, you were satisfied to take 50 gulden instead of 5,000." *Family Doctor.*

How foolish for writers to smother and choke and weaken their thoughts under a great weight of words. They make us fairly dig for them, only to find it necessary to strengthen and reclothe the poor things before they are presentable to good society.

EATING.

Editorial in Family Doctor.

One of the greatest mistakes a man can make is that of paying too little attention to his diet, for the neglect is often the cause of ailments that sometimes develop into serious disease. Do we not all know the man somewhat past middle age, but whose years do not imply any senility or decay, who becomes fidgety, unfit for business, deprest, and melancholic, even to the verge of insanity? We know him to have been a hard-working man of business, always perhaps a little nervous, and very probably an indifferent sleeper. He is more tired when he ought to get up than when he went to bed; he rises at the last moment, and, bolting a mouthful of breakfast, rushes off to catch the train, worried and anxious lest he be late at his office. At lunch-time, particularly if he is busy, he takes, not a meal, but a biscuit, a sandwich, eaten perhaps standing, and often bolted in such a manner that the grim fiend indigestion claims him as his own, more particularly if he indulges in frequent "nips." Very often his reason is that if he makes a heavy meal he renders himself unfit for the duties of the afternoon. But there is moderation in all things—a simple lunch taken quietly and sitting down should be indulged in. In the evening he eats his dinner, very often a heavy meal, and perhaps not before seven o'clock. Now, granting that this meal is amply sufficient, such a man lives virtually on one meal a day. Result, in time a breakdown. A holiday sets him up again for a time, but, if he persists in this evil course, only to break down again. We cannot too strongly impress on our readers the necessity in the interests of their health devoting a proper attention to this all-important question of careful eating. To get up in plenty of time for a comfortable breakfast is after all only a question of habit, and we ought not to forget that a good breakfast with plenty of time to eat it in is the very best foundation for the day. Again, a moderate lunch, taken leisurely, and not bolted, is a necessity. So is an early supper with an evening of leisure.

THOUGHTS IN THE COUNTENANCE.—The most beautiful face is the perfectly happy one, for happiness brings a shining to the eyes, a new curving to the lips, a rounding of and an uplifting to the cheek. In all the happier and loftier emotions the muscles leap upward. It seems a sacrilege to analyze a smile and make

it of mere muscular energy; but perhaps if it is looked at in another way, seeing in the muscles of the face the ready handmaids of the soul or thought, we may at once recognize the importance of the relations existing between the servant muscles and the master mind. * * *

All along the outposts of time has this truth been cried out by the various sentries. Marcus Aurelius emphasized it; men of brawn and brain have echoed it; famous beauties have profited by it. But the search for the best in ourselves, for the perfecting of our bodies, must not be made languishingly. It must be carried on with wide-open eyes and minds; by doing "noble deeds, not dreaming all day long." One need not look upon the doing of kind things as a sacrifice or foolish self-repression, for that is seeing it in a false light. In reality, it is true self-protection, and we ourselves are the truest beneficiaries of our cultivated "good nature."

Every smile given is like money put out at usury, and rarely returns a poor interest. Every depressed thought, every angry one, every bitter one, leaves a trail behind it as vile as the poisonous footprints of the tarantula. "If the hive is disturbed by rash and foolish hands, instead of honey it will yield us bees," may certainly be paraphrased to read, "If the features are stirred into action by bitter or harsh thoughts, instead of beauty they will yield us ugliness."

Demorest's Magazine.

A SOURCE OF IRRITATION.—Some years ago, on a visit to Ann Arbor, I heard Prof. Ford lecture upon the bones of the head. In the course of his remarks he said, "I will show you where absorption of the lower jaw has taken place to such an extent as to bring the mental ganglion to the surface of the jaw, instead of a half inch or more below it, as when the jaw is in its normal condition." He showed a lower jaw with the opening directly on top.

This explained what to me had been a mystery in several cases, where there was a very small spot in that locality (the region of the second bicuspid) which was excessively sensitive. Since then I have had several similar cases, one of which was in my office this morning. The only thing to be seen is a white spot about the size of a pin's head. They have always occurred on the right side in my experience, a singular fact.

Prof. L. P. Haskell, in Ohio Journal.

HINTS.

By a Lazy Man.

1. You can cut vulcanit with a file better when both are dry than wet. If you think you need a new file, dip your plate in dry plaster of paris, rub it off with a wheel-brush, and often you will find that the fault is not in the file.

2. After you have polished your plate, sprinkle a little dry plaster on it, and give it a run over the soft wheel-brush.

3. Tack a square piece of bed-tick or apron cloth under the part of the bench where you work. It will always be there. Pull it over your knees when you sit there to work. Keeps your pantaloons clean, and often keeps you from saying naughty words, as it catches teeth you might drop on the floor.

4. When your rubber overshoes wear out, keep the soles. Very handy if fastened on a block convenient to use. The heels make good bench blocks.

5. Keep your old kid gloves and wear them when sand-papering or polishing artificial sets. Rub vaselin into your fingernails and over your fingers before putting on the gloves.

6. When your dental engin kicks or makes a noise at the joints, oil it a little. If that does not stop the row, do not swear at the manufacturer till you have got down on your marrow-bones and tightened up screws that may be loose. If that succeeds shake hands with yourself; if it does not, smash something. It will ease your mind.

7. Cover your dental engin with a cover the shape of an old candle extingisher.

Dominion Journal.

Dr. C. M. Carr, Salt Lake City, Utah, exhibited at the Southern Association his method of "anchored adjustable dentures," showing full upper and partial lower practical cases. The full upper denture was "anchored" to cuspid root on the left and third molar on the right. This denture was attached in such a way as to make it impossible to place an excessive pressure on either of the anchorage piers. At the same time it was easily removed and adjusted by the patient. Lower partial denture, comprising first molar on left and second bicuspid, first and second molars on right, was "anchored" to second molar on left and second bicuspid on the right. It was "anchored" in position, as far as any liability of being thrown out of position is concerned, yet adjustable and removable by the patient at will.

Cosmos.

TRIBULATIONS OF EDITING.

The definition of the transitive verb "to edit" includes the selection, preparation and revision of material for publication, and so opens quite a large field to the discrimination and labors of the editor. Much of the material sent in to journals for publication, and much of the matter collected by reporters from the proceedings of societies would be amusing, were it not pathetic in its varying degrees of value. Much of it has to be rewritten, much eliminated, and much is published with editorial hesitancy and a foreboding of coming evil.

It is difficult for those not actively associated with journalism to realize that much that is said and written on scientific subjects does not pertain to the subject under consideration, and in itself is of no value to the disinterested listener or reader; and it is even more difficult for the editor to say just where the line can be drawn without fear of giving offence.

If each speaker or writer confined himself strictly to the subject in hand, making all his statements in such a concise and lucid manner that their meaning would be easily understood, the value of their publication would be increased in proportion as it lessened the labor of the editor and wear and tear on his scissors and pencil.

These observations are prompted by the recent circumstance of a plaint of a well-meaning but supersensitive tempered member of an association, who, unfortunately, labored under the impression that having delivered himself of a disquisition on a special method of operation in which he prided himself, found that his remarks had been eliminated because they were not germane to the special subject of discussion. It was difficult with him, as it has been with many another enthusiast, without doubt, to appreciate the fact that "there is a time and place for everything," and that irrelevant remarks must be absconded at the stage of publication.

Editorial in Pacific Medico-Dental Gazet.

All teeth with semi-devitalized matter or putrescent pulps I fill in one sitting. After canal is cleaned as usual I dry it thoroughly and simply take a little hickory or orange wood, cut it to a point about the shape of a pin, hold it over the alcohol lamp and char it (don't burn it), force it up into canal and fill tooth. Have been filling teeth thus thirteen years.

L. Arndt.

SALT.—There are many interesting facts connected with salt which it is well sometimes to remember. To begin with the name itself, a curious fact is to be noted. Salt was formerly regarded as a compound resulting from the union of hydrochloric (or, as it used to be called, muriatic acid and soda, and hence the generic term of salt was applied to all substances produced by the combination of a base with an acid. Sir Humphrey Davy, however, showed that during their action on each other both the acid and the alkali underwent decomposition, and that while water is formed by the union of the oxygen of the alkali and the hydrogen of the acid, the sodium of the former combines with the chlorine of the latter to form chlorid of sodium; and this term is the scientific designation of salt, which, paradoxical as it may seem, is not a salt. At one time nearly the whole of the salt used as food and for industrial purposes was obtained from the sea, and in many countries where the climate is dry and warm, and which have a convenient seaboard, a great quantity of salt is still obtained. In Portugal more than 250,000 tons are annually produced, and the same quantity approximately is obtained on the Atlantic and Mediterranean coasts of France. Spain has salt works in the Balearic Islands, the Bay of Cadiz and elsewhere, which turn out annually 300,000 tons, and even the small seaboard of Austria produces from 70,000 to 100,000 tons.

Family Doctor.

ACETYLENE FOR POWER PURPOSES.—It is reported that some very successful experiments have been made in France regarding the production of power by means of acetylene, whereby it can be employed for operating ordinary gas engines without necessitating any alterations except a reduction in the size of valves. Acetylene develops three times as much energy as ordinary illuminating gas. The explosive mixture used consists of 10 parts of air and 1 part of acetylene. An estimate gives the consumption of 8 to 16-horse power motors at no more than 160 liters of this mixture and the cost per horse power hour, according to the present price of calcium carbide, at about 6 cents. The investigators extended their tests to all the effects resulting from the use of acetylene for power purposes, as the possible increase of shocks, manner of fastening the engine to the floor, etc. Heretofore it has been supposed that with acetylene no continuous operation of a motor could be obtained.

Railway Review, Sept. 25.

THE PROXIMAL SURFACE IN FILLING.

Dr. J. N. Crouse.

After all, in my own mouth, in my child's mouth, in the mouth of my best friend, I should prefer to fill the cervical margins with gold, particularly when one has the skill to do it. It necessitates first plenty of space in moving the teeth apart; it necessitates straightening up the wall and cutting it up. On the proximal surfaces, when you get near the gum, you will find a white streak near the lateral margins; if you intend to fill that you must get a straight wall before you can make a perfect filling. I shall feel very sorry when the day comes when non-cohesive gold for a certain class of cases is abandoned. For a buccal cavity in a large molar, where there is not much pressure on it in chewing, where the strength of the cohesive gold is required, there is nothing equal to it. At the cervical margin, to feel absolutely sure, I used three cylinders of non-cohesive gold, made of the right length, to extend over the margin, using this as a starting point, then I continue with cohesive gold. That has been my practice for many years. *Review.*

FRUIT EATING.—We have always advocated in the columns of the *Family Doctor* the great benefits to be derived from fruit-eating, and we cannot dwell too strongly on the importance of making fruit one of the principal articles of our daily food. There is no doubt that each year people grow to appreciate more fully the value of it, and eat it not as a luxury, but as a staple article of diet. Fruits are nourishing, refreshing, appetizing and purifying, and consequently have effect on the health, and, what to some is of almost equal importance, the complexion. Yet there are differences. Grapes and apples are highly nutritious. The former usually agree with the most delicate persons, for they are easily digested. Oranges, limes and lemons are of great value as a means of improving the complexion, and they are especially good if taken before breakfast. Ripe peaches are easy of digestion and are fattening. Nothing is better to enrich the blood than strawberries, which contain a larger percentage of iron than any other fruit. Fruit with firm flesh, like apples, cherries or plums, should be thoroughly masticated, otherwise they are difficult to digest. The skin of raw fruit should never be eaten, and before eating grapes or any small fruit, care should be taken to remove all impurities by washing. *Family Doctor.*

PRACTICAL POINTS.

By Mrs. J. M. Walker, Bay St. Louis, Mississippi.

A Nervine.—For some years I have been giving as a nervine a thirty to thirty-four drop dose of extract of skullcap, with good results. As far as I know it is perfectly harmless, with no ill after effects. Patients that seemed to have no control of their nerves, submit to long and tedious operations, saying they feel so easy they could almost go to sleep.

C. H. West, Dental Review.

Broach Holder.—To reach the anterior roots of lower molars, and the buccal roots of upper molars, I cut off the Donaldson broach in the middle and affix a ball of sealing wax to the end. It is easy to put on and gives good grip to the thumb and finger for rotating.

H. B. Hinman, Ohio Den. Journal.

Sterilized Water—New Five Minute Process.—Bromin added to water will kill all the pathogenic germs in it in five minutes, the addition of ammonia will neutralize the bromin. Water 100; bromin 20; potassium bromin 20 for each liter of water. Neutralize with an equal amount of 9 per cent ammonia. The water is then perfectly clear, the taste is scarcely altered; the amount of bromin remaining is so small that it affects neither the taste nor health. The process is rapid, effective and cheap.

Schaumburg Deutsche Med. Woch. (Jour. Am. Med. Ass'n.)

Cocain Combination Formula.—Parke, Davis & Co., soluble tablets. One tablet in 25 m. water gives 2 per cent solution cocain.

R.—Cocain.....	gr. $\frac{1}{2}$
Sulfate morphia.....	gr. $\frac{1}{8}$
Sulfate atropin.....	gr. $\frac{2}{100}$
Sterilized water*.....	gtts. xxx
Sig.—Inject hypodermically	gtts. v to xv. M.

N. S. Hoff, Ohio Den. Journal.

Sensitive Dentin.—Two parts oil of cloves, with one part carbolic acid, sealed up in a sensitive cavity for several days, possesses great value.

E. Schieholm, Dental Review.

Uses of Pyrozone.—Where alveolus has been perforated by the progress of suppuration, and the soft tissues have not got sloughed, I advise free lancing over the congested parts and the insertion of a pledget of cotton saturated with a 25 per cent solu-

*Sterilized water—distilled water containing 8 to 10 per cent listerin or entymol.

tion of pyrozone, which should be allowed to remain for a few moments.

Dr. Wittlander, Pacific Stom. Gazette.

White Decay.—If white spots of decay on front teeth are treated by burnishing with a steel burnisher, moistened with pyrozone, it will prevent recurrence of decay and save the teeth without filling.

Percy D. Greene, Dental Cosmos.

Chronic Pyorrhea—Treatment of an Advanced Case.—

An upper left first bicuspid, no connection between the roots of the teeth and the maxilla; pus constantly flowing and the patient's breath impaired. The tooth was extracted, the pulp removed, tooth sterilized, apex of root amputated, socket deepened and tooth replanted. Result—Tooth firm and in a healthy condition. Silk ligatures were used instead of mechanical splint. Check hemorrhage, if any, with sulfo-naphthol and hot water.

Russell H. Cool, Pacific Stom. Gazette.

Radical Treatment of Persistent Abscess.—Fill the root-canal permanently, then lance the gum over the seat of the disease; drill through the process to the root apex, and with a round bur of sufficient size cut off the apical end of the root, and remove as much of the adjacent alveolar tissue as may seem to be affected. Wash the cavity well to remove all debris, pack with iodoform gauze, and leave the result to the kind hand of nature.

S. H. Guilford, in the Stomatologist.

Absolute Alcohol as a Disinfectant.—From experiments conducted in the Johns Hopkins hospital, it appears that Squibb's absolute alcohol is a valuable disinfectant for instruments liable to infection under the conditions which ordinarily surround us. It is the best substitute for heat, which, both moist and dry, dulls the edge of cutting instruments.

Dental Register.

Rust-proof Solutions.—In 1893 Dr. Marechal placed several collections of new steel instruments in the following solutions:

1. An aqueous 2 per cent solution, sodium bicarbonate.
2. " " " " carbonate.
3. " " " " borate.
4. " " " " benzoate.
5. " alcoholic " " " "
6. Alcohol, 95 per cent, 5 grams to 1 gram sodium benzoate.
7. Alcohol, 95 per cent.
8. Water.

Two years later the instruments in the first six solutions were found intact, without a trace of rust, even when tested with potassium sulfo-cyanid.

In the 7 and 8 they were completely covered with rust.

Gaz. Med. de Liege.

Successful Pulp Capping.—Pulp exposure in occlusal cavity capped in 1866; cap of heavy gold foil filled with a paste of hypophosphite of lime and glycerin, covered with gutta-percha; cavity filled with amalgam. Opened in 1872; exposure obliterated and adjacent dentin normally sensitive. In January, 1897, pulp exposure from caries on proximal surface at the cervix; no indication of pulp degeneration.

Dr. Jack, International Den. Jour.

Pulp Devitalization.—Make a paste of arsenic, acetate of morphia and cocain. Place a small particle of the paste on a slab, and with spatula work it into a small pellet of cotton. Make a concave cap of air-chamber metal, smear the concavity with Canada balsam, to which the pellet will adhere. The application is thus easily managed. Seal in with cotton saturated with sandarac varnish.

S. Eschelman, Dental Cosmos.

Setting Crowns.—Although a little more difficult, it will be found much more satisfactory in the end if crowns are set with gutta-percha instead of cement.

Dr. C. T. Barker, International Den. Journal.

Root-Canal Sterilization.—Wash out first with neutral peroxid of hydrogen (or pyrozone); second with cinnamon or peppermint water. Dry and introduce strand of cotton or silk wet with myrtol. Seal in for one or two days. Prevent ingress of saliva or water and fill. *A. W. Harlan, Ohio Den. Journal.*

For Hardening the Gums.—In that condition if the mucous membrane in which the gums bleed readily when brushing the teeth. Sanitol is an effective and agreeable mouth wash.

Dr. Courcsey Lindsley.

To Prevent the Clouding of Mouth Mirrors.—Smear a thin layer of ordinary soap—soft but not moist—over the surface of the mirror; then polish with a dry cloth. However much the mirror may be breathed on, the surface will remain bright and clear. *Gilbert E. Seaman, Journal Am. Med. Association.*

[Or heat the mirror before using.—ED. BRIEF.]

"The Magic Compress."—A compress wet with a 2 per cent solution bicarbonate of soda will arrest pain and suppuration almost immediately. Is more effective than iodoform, phenic acid, etc., in treating purulent wounds. *Semaine Medicale.*

Restoration of Bicuspids.—When the palatal wall has broken away, the tooth being pulpless, the contour can be restored as follows: Cement into the root a strong metal pin, leaving it nearly

as long as the finished palatal surface is to be. Cut away all soft and frail edges and place around the tooth a temporary matrix, which fill carefully and solidly with amalgam, using it very plastic about the pin and broken walls but hard and dry in completing the operation. When perfectly hard remove matrix and shape and polish the amalgam.

E. L. Davenport, International Den. Journal.

Prevention of X Ray Burns.—A sheet of aluminum, if grounded and placed between the tube and the patient will prevent the burn, while interfering in no way with the X ray phenomena; the induced currents are formed in the aluminum and carried by the wire to the earth without injury to the patient.

Dr. C. L. Leonard, Jour. Am. Med. Association.

Blow-pipe for Waxing Cases.—A convenient and effective blow-pipe for waxing cases is made by using the nozzle of a chip blower and the mouth-piece of a tobacco pipe, connecting the two with a piece of rubber tubing ten inches long.

I. A. Robinson, Dental Weekly.

Protection of Coronal Borders.—When the cavities are not exposed to view, a 50 per cent solution silver nitrate may be applied to the cervical borders of mesial and distal cavities in molars and bicuspsids, and will do much toward preventing decay at that point. By means of a few shreds of cotton on a broach it may be applied without retaining other portions of the tooth.

H. B. Hinman, Ohio Den. Jour.

Gaining Access to Pulp.—Grind away the overhanging walls with sharp, keen-grit carborundum points kept wet with water. I mold them as needed from new carborundum, softening a small piece and placing it on a mandrel and passing it through the flame of the spirit lamp till the shellac is partially melted; then mold it deftly between thumb and finger, and while yet soft, place in hand-piece and revolve under light pressure to true up. Such a carborundum point does not heat or jar the tooth as much as the steel bur, and grinds enamel faster than a bur will chip it.

C. H. Tillotson, Dental Digest.

Protection of Wounds.—As a covering and protection for slight wounds on the hands, an application of collodion and Peru balsam, 1 to 10, gives excellent results; it will remain intact and perfect for days; washing the hands with soap and water does not disturb it.

(Translation) B. J. Cigrand, Dental Digest.

ITEMS.

Use other people's brains all you can, but use your own more energetically than those of others, and then you can use theirs to better advantage. *Atlantic Journal.*

For painting gums to disperse inflammation, iodin, glycerin and aconit in equal parts will prove more effective than iodin used alone. *Luella Cool, San Francisco.*

It is the custom of women of Japan, who are married, to have their teeth blackened. Porcelain teeth for plates, when necessary, are made jet black, similar in form to the white ones. *Dr. Luella Cool, San Francisco.*

The man who is to succeed in painless dentistry must not depend on one manner of practice, but must intelligently apply the best course of treatment to the different conditions presented by his patients. *H. H. Tompkins in Cosmos.*

In taking an impression have a mouth mirror just within reach, and if you do get excess of plaster down on soft palate, reach down with mouth mirror, and one quick upward scrape, and your patient will be feeling comfortable. *E. A. Randall in Dominion.*

Dr. F. T. Van Woert, of Brooklyn, uses a fifty per cent solution of sulfuric acid as an obtundent for sensitive dentin. He uses but little at a time, and as the affinity is soon satisfied becomes self-limiting and will do no harm. If too much is used, it can be readily neutralized with a solution of soda bicarbonate. *Dental News.*

EDITOR OF DENTAL BRIEF:—I should like to learn through your valuable paper, if possible, the best and quickest method of filling proximal cavities with gold cylinders, making the filling appear or extend to the posterior surface, as it does at the anterior; also, if the gold should be heated to a red heat.

Subscriber.

Not merely our health, our strength, and our incomes, but our higher intellectual life, and even our morals depend on the care which we take of our bodies, and among the things essential to health and wealth, to right thinking and right living, one, and that not the least important, is our diet.

Atlantic Journal.

TO ALLAY INFLAMMATION OF THE PULP.—Cleanse the cavity and wash with warm water. Over the exposure invert a concave disk containing pulverized thymol. If pain is very severe place a drop of chloroform after adjusting the disk. Fill with temporary stopping.

Atlantic Journal.

CORKS FOR POLISHING.—Many still use felt cones for polishing rubber plates. A good sized cork, mounted and rough-ended with a coarse file will carry sufficient pumice to polish the plate much more rapidly than the cone, and it gives a full, rich polish unattainable the other way.

La Salle.

It would be a great gain to professional attainment if we should use our influence for the foundation of an organization that would arrange a course of studies after the plan, say, of the University Association, of which Bishop Fallows is at the head, the object of which would be to lay out a course of reading and study that would interest the profession in the pursuit of useful and scientific professional knowledge, that would be a post-graduate course of study.

C. R. Taylor, in Ill. Society.

In removing pulps in the anterior teeth expose the nerve, then lay a crystal of cocain directly over it, care being taken to first adjust the dam, and in a few minutes you can take a nicely sharpened stick of orange wood, and with a quick tap of the mallet drive the point nearly to the apex of the root, withdraw, and frequently the nerve will come away with the pin; if not, remove with the broach. If carefully done you will cause no pain.

W. C. Kerns, in Ohio Journal.

Prof. Brouardel, in a recent lecture, related the following case: A man had a pharyngeal abscess so deeply seated that his medical attendant was afraid to meddle with it. One night a burglar broke into the house, and on the sick man's calling for help tried to throttle him. The abscess burst, deluging the burglar with pus, and causing him to beat a rapid retreat. His intended victim experienced intense relief, and made a rapid recovery.

Ex.

Too many of us, when we have established ourselves in a community, in some way get the idea that the community belongs to us by right of discovery or conquest, and that we are monarch of all we survey by divine right. The result is, when another enters our (?) territory, especially if he is a young graduate, he is treated as an interloper—an enemy—and made to feel that he has no rights that we should respect. Such an illiberal spirit is not only narrow and selfish, but it is as truly unprofessional and unethical as is the more gross form of quackery.

C. R. Taylor, in Ill. Society.

Toads are invaluable in the garden, for they keep the insects down in the most wonderful manner. Professional florists even import them in hundreds, and pay a high price for them, too, knowing that before very long they will far more than repay the outlay upon them. And every gardener, amateur or professional, should have a toad or two in his cucumber frames, just to act as police in keeping down insect criminals.

Family Doctor.

HOW TO BE SUCCESSFUL.—A dentist, to be successful, must not only be conscientious and careful, but he must confine himself to his profession. Our profession demands our whole strength, and all our time; and a dentist who attempts to run a drug-store, or indulge in speculation, or has his mind on baseball or dances, the chances are against his success.

J. M. Whitney in Stom. Gazet.

The way to make an open-face crown for a cuspid or incisor that will fit perfectly, is as follows: Take, for instance, a central incisor; the left lateral and cuspid are out, and you want to make an open-face crown for the central. First, get your strip of gold a little wider than the tooth is long, and a little longer than will go around the tooth. Bring it around the tooth and with a pair of flat pliers pinch and draw tightly around it till it fits perfectly. Hold it tight and with another pair of pliers, of the same kind, draw or pinch the gold down at the point of the tooth. Stick a pin through the edges, remove, and solder together. Trim edges and cut out the face in the usual way. You will find that it fits perfectly and will not take five minutes to make the crown in this way. If the tooth is broken off at one corner build it up with cement.

Ohio Dental Journal.

EDITORIAL.

LIFE INSURANCE.

A rich man may so arrange his affairs as to do without life insurance, but a poor man cannot otherwise adequately protect his family. It is an expense while he lives, but what a comfort to know his loved ones are provided for when he is gone.

How foolish for a wife to oppose the insurance of her husband on the plea that it is providing for his death. I know an instance, in the western part of Wisconsin, where, in spite of the wife's opposition, the husband had his life insured for five thousand dollars, and hid his policy. While on a journey he died. There was a mortgage of \$1,200 on the home, which the widow found it impossible to raise, and she could find no purchaser for the property, though it was worth double the amount of the mortgage. So she gave it up to the mortgagee. She also found it impossible to support her three little children, and therefore bound out her boy of nine years to a farmer, gave to a relative her little girl of six years, and with her infant went to Milwaukee to do dressmaking. When the next payment on the life insurance came due, the usual notice was given at the address he had provided, but of course it was not answered, and the policy was declared forfeited. Some time after this, the company accidentally heard that the man was dead. They sent an agent to Gainsville, his late residence, to ascertain the facts. But no trace of the widow or the policy could be found, except that the widow had gone to somewhere in Milwaukee. The furniture had been sold at auction and scattered. Suspecting that if he could find the man's writing desk he might find some trace of the policy, the agent advertised for it, and found it. Beneath a false bottom in one of the drawers he found the policy. He then advertised in the Milwaukee dailies for the widow and found her.

What a change! The mortgagee willingly gave back the home on payment of his claim; the farmer gave back the boy,

and the relative the girl, and all were once more in their old home. A responsible man gave her 7 per cent for \$2,500 of her money, and this, with what she could do with her needle, gave her a comfortable living.

Life insurance statistics show the death rate of total abstainers from alcoholic drinks to be 7 or 8 per 1,000 against 24 per 1,000 among tiplers. I am insured in several companies, but my payments in the American Temperance Life Insurance Association, where none but total abstainers are admitted, are not more than half that in ordinary companies.

SIDE SHOWS.

While we should all have a leading occupation and make it the principal thought and work of our life, we should spend many an odd hour and rainy day feeling for something that may be of profit or pleasure outside of our usual work. A genius is never idle, and he cannot help wandering into untrodden fields. And in his wanderings his feet will be sure to tread on something valuable. His fingers will itch for something new to handle, and his eyes will be finding something curious and unique to investigate. The brain will evolve pictures to put on canvas, problems to be put to practical use, and mechanisms to be made to run some way, somehow and for some purpose for the world's improvement.

And we are all geniuses in a way. Many of our best inventions come from the brain of half idiots. Girls and boys that have never given promise of anything useful, all at once are seized by a thought, a plan, a thing, with such an enthusiasm that fairly makes them bound out of their boots, or at least out of their monotonous past; and away they fly, to set the world on fire. We should all be looking out of the window of our soul for something to give us unusual employment; and look ever and anon, in season and out of season, here, there and everywhere for something the world has not yet found.

"What makes this clatter and noise?" said a lady, as she rode over the elevated track in New York one day. Mind you,

she was only a woman, and a country woman at that, and one unacquainted with complicated mechanism. "This is a nuisance, but it must be also a tremendous friction that impedes the moving train." Down on her knees she got where she could better see and judge of the conditions. Getting out of the train, she watcht other trains pass, and going to the end of the route she examined the cars and the engine and the track with the minutest care. Her research and thoughtfulness were rewarded. The trains run more smoothly now, and she has ten thousand dollars for her pains. The world does not know everything yet. It is waiting for you and me to reveal to it many things that it will pay us well for making known.

Everything we attempt in this direction will not be a success. Often we shall rack our brains and spend our time and money, and the patience of our friends, for nothing. We shall become discouraged and hampered, and vexed for our folly; we shall many a time wish we had minded our own business, and kept at our legitimate work, and resolve we will never again be led into the bog by such a will-o'-the-wisp. For a time we will behave ourselves, but if we have a spark of a genius in our veins, that spark will, in some unexpected moment, set us all ablaze again, and away we shall go into untrodden paths in chase of the unknown and unknowable. It is said that in every calling not more than one in fifty make a real success in life, and that not more than one in ten make even a decent living; and yet all plod on, hoping to overtake better fortune. Inventors are much the same. They hug a pet idea for dear life till it robs them unmercifully of time and money, and then they drop it, only to take another to their bosom to play them the same trick. Their path is just strewn with the deserted objects of their folly; and still they take up new fads with all the loving embrace of a first child. Well, if this was not their way, few useful things would be invented. It is inevitable that we must stumble over our losses to make gain, make failures to bring success, and have disciplin and struggle and loss to get maturity and skill and final success. Where there is nothing ventured there is nothing had—hardly anything. Ask our most prominent men—those who seem to

be borne on the wave of success—how success came to them, and they will tell you it was by overcoming difficulties, submitting to severe disciplin, ignoring failures, and never acknowledging defeat.

We do not advise abandonment of legitimate work, but we do advocate some side show to consume spare time, induce intensity of thought to bring something unusual to pass. Such study and labor and research will not hurt you; it will do you good in sharpening your wits, improving your skill and enlarging your powers. You will better enjoy your legitimate work; you will be a better man every way, and, on the whole, live a happier life, especially if you succeed.

NERVOUS EXHAUSTION.

Nervous exhaustion is a foolish, an unnecessary and generally a criminal indulgence. It is simply the result of excess, either of indulgences, or work, fret and anxiety. But all manner of causes or excuses will not hide the unwisdom which has induced it. It has an indefensible cause, and the sooner the sufferer is made to realize it is a fault for which he should feel responsible, and that he must immediately correct it, the sooner he will show good sense in remedying it. Medicin will not do it. The pity, sympathy and fawning of indulgent friends will make it worse. The will to rise above it and to counteract it by sensible means is the only remedy. Settle it definitely that it is your own fault, and that your own exertion is the only cure, and you have half mastered the difficulty.

But whatever the excess that has brought it on, or even if it has been caused by organic diseases, simple inaction will not cure it. Even overwork does not call for inactivity. Some years ago, when overwork, over-strain of the nerves, and over-mental excitement in establishing a dental depot had brought on nervous prostration and acute dyspepsia, my physician prescribed strychnia and sixteen hours a day sleep, or at least rest in bed, sleep or no sleep, and entire indifference to everything. I tried it till it took me quite into the cold, dark shadow of the

grave; then I tried a prescription of my own—activity without excess, work without exhaustion, enjoyment without enervation. I just supposed myself to be a child again. I played with the children and young people that I might catch their spirit, act with their simplicity and enjoy with their innocence. I could not run over the hills as fast as they, nor hop and skip as nimbly, nor roll over as gracefully, but I did my best, and then rested—rested frequently, and oh, how sweetly. The smallest child laughed at me for outrunning and outplaying me, and wondered at my lying down when they were ready to frolic again. But they little knew the strength, the vim, the spirits they were putting into me.

Well, I am young again, and I believe if half of our nervously exhausted friends were to go and do likewise, they would get young again too. Not do, perhaps, just as I did, for may be they could not so shock their dignity, or so sillily act out second childhood. But do something, though you have to hide in the backwoods and play with the dog, sing with the birds and sleep by the murmuring brook. Get out of yourself someway, and especially get out of your old rut, whatever that may have been. And above all things, if your condition has been caused in whole or in part by excessive indulgence of the passions, or by the exhausting stimulus of alcoholics and tobacco, quit it—for your life's sake, quit it now, or you deserve to die.

Ah, it is a fine thing to have a nice, cozy nest where we can deposit rich thoughts as so many nest-eggs. Some time we may hatch them out into living things. Too many of us leave them around loose, or even throw them away after a few minutes' pleasure with them. How much we waste that we should save, and how much we preserve without a thought of improving. This is just the difference between a wise man and a fool. Both have good thoughts, and gather them easily; but a wise man puts them **where** they will fructify. He nourishes and improves and matures them till they become vital, mighty forces; while the fool, when he wants to use them, forgets even where he threw them away.

WHAT ARE WE HERE FOR?—The fact that we are sent into the world to do a specific work is a grand incentive to be and to do our best. And if we really get hold of our work, and our work gets hold of us, we shall find ourselves singularly fitted for it by our very make-up and our work peculiarly fitted for us; and when in it, that very fact will make us contented and happy. It is just as true that, if we will look for our proper sphere, and work intelligently and diligently, we shall find it, and it will be our chief pleasure to do it, and the world's advantage to have it done. But oh, if we are out of joint with the world, and the world is out of joint with us, and specially if we are a stumbling block in the world's good and progress, the world would be well rid of us.

Some are forever anxious of the future; others are indifferent; neither are wise. If we are conscious of fulfilling well the present we shall rest in confidence for what is to come; and this is the great blessing of well-doing. John Wesley was once asked: "Mr. Wesley, if you were assured that next Sabbath would be your last day on earth, what would you do?"

"I would rise at four o'clock as usual, and after devotion and breakfast preach at Cherry Chapel at six and at Walpole at eight and at Linn at ten. I should hope to have a good dinner at twelve, and preach to the brethren at Landsdown at three. After supper at home I should again hold service at seven and be ready to retire at ten. And oh, if this was to be my last day on earth, how joyfully I would fly away and be at rest in my heavenly home."

Thus, the ever present well spent, the ever future would be without anxiety.

At the time of the accession of Peter the Great, the Russian year began on September 1st. He changed the calendar, and made the year commence with January 1st. He also prohibited the wearing of beards by his subjects, but granted exceptions on the payment of a tax.

KERNELS.

Thycalol makes a good mouth wash.

Our cork supply comes chiefly from Spain.

Platina is being found in Canada in considerable quantities.

The plague of Foochow last year killed forty thousand people.

It is said that men attending pans in salt works are never known to have cholera, small-pox, scarlet fever or influenza.

In the treatment of pyorrhea, sulfate of copper is good. Though it should not be allowed to remain long in the pockets.

Instead of oiling an impression, varnish, and just before pouring the cast, soak in water.

Coating the model with a lather of good shaving soap will prevent plaster from adhering to the vulcanit plate.

A little cinnamon burnt where disagreeable odors prevail is a good and pleasant deodorizer.

It is calculated that 33 per cent of the cigars sold in London are not made of tobacco at all.

It is said a good aluminum solder is made of 50.03 per cent zinc, 47.99 tin, 1.76 aluminum and 0.22 phosphorus. No flux is used, though the parts must be clean and bright.

Dentures sometimes become cracked by a change in the form of the mouth, causing a rocking. In fact, we believe this is the most frequent cause.

In many proximal cavities in front teeth the gold will show much less if the work is done from the lingual surface. This is more difficult, but practice makes it quite practicable, especially after you become skilled with the use of the hand mirror.

Probably the most expensive piece of carpet in the world is stored in the treasure room of the Maharajah of Baroda. It is only ten by six feet, and cost \$1,250,000. It is woven of strings of pure pearls, with center and corner circles of diamonds.

Trichloroacetic acid seems to be a good astringent, as well as a good styptic. A little past under the gums when filling a cavity contiguous to it, will prevent weeping. This is often quite convenient where the clamp or dam cannot be used.

For a cheap ornament for the office or parlor fill a tumbler with water more than saturated with salt. The salt will crawl over and cover the glass with a thick coating of beautiful crystals. The water must be renewed as it evaporates, and the salt too, if enough was not used in the first place.

In making small gold fillings in artificial teeth, Dr. C. A. Clark, of England, first drops in the cavity soft adhesive cement. Into this, while soft, he presses small bits of gold, adding gold to this as the cement hardens. Though the cavity has but slight undercuts, they are sufficient to secure a permanent filling.

The returns of causes for insanity in England, France, Denmark and the United States show that of every 100 cases 24 are hereditary, 24 may be attributed to drink, 12 to business and money troubles, 11 to loss of friends, 10 to illness and 19 to other causes.

The most peculiar custom of the Australian aborigines is the mutilation of teeth. The boy who wants to be thought a man will often break out one of his front teeth, thus anticipating the ceremony which always takes place when a young Australian is acknowledged to have entered manhood.

Are we not getting into a regular fad for surgical operations? It is resorted to for almost every malady. For appendicitis, for instance, the knife is so generally resorted to that the novice might suppose there is no other cure. There is certainly no other so often fatal. We are told by such high authority as Prof. William Pepper, of the University of Pennsylvania, that ninety-five cases in a hundred are cured permanently without an operation. What portion is cured by a surgical operation?

Lactophenin seems destined to supersede most other anesthetics. It is immediately comforting without poisonous or other ill effects. Its dose is from 5 to 10 grains. This may be increased to a daily maximum of 40 grains. It is only slightly soluble in water but may be given dry or in capsules.

The Office and Laboratory says 1 oz. collodion in 3 ozs. silver gloss (powdered tin and zinc, to be had of dealers in paints) makes good coating to prevent plaster sticking to rubber plates while vulcanizing. It also gives the plate a smooth surface. The camels' hair brush should be cleansed after each using. A little dilute muriatic acid will remove any bits of plaster still sticking to the surface.

Nickel is found more abundantly in Canada, and is more easily mined, than in any part of the world. It now looks as though, when nickel steel comes into general demand, as it undoubtedly will, Canada nickel will control that industry. The whole coast stretch of territory reaching from Lake Superior to Labrador, is rich in it and will produce unlimited quantities.

MOLAR ROOT-CANALS.—When the root-canals of molars are difficult of access, small and tortuous, and the cavity of decay large, it is good practice to cut off the crown, grind down to solid foundations, fill the root-canals properly and apply an artificial crown. A good artificial crown on well-filled roots is better than a natural crown over poorly filled or unfilled root-canals.

ORAL SANITATION.—Dr. Walker advises his lady patients to make a habit of sitting down before the mirror while cleaning the teeth. In this way he feels assured that they will devote sufficient time to the brush, silk-floss and antiseptic mouthwash to do the work thoroughly. A few drops of pasturine on the brush has a stimulating, refreshing influence, and has a powerful germicidal effect as it contains 3-10 per cent formaldehyde.

STERILIZING THE HANDS.—To consume the least time between patients, Dr. Walker has a good article of soap reduced to a jelly by grating finely and digesting in water. A very small portion of this soap-jelly produces an almost instantaneous lather all over the hands, to which is then added a little pulverized mustard (such as is used for culinary purposes). This makes fine creamy lather which is a good germicide, is easily rinsed off, and leaves but a faint and not unpleasant odor.

Sealing the apex of a root with a paste of aristol is recommended by some. Dr. Boyd, of Troy, rolls it into a paste so stiff as to make a cone as sharp and as strong as one of gutta-percha, and thrusts this into the tooth canal quite to the apex, and then presses it so as to completely fill the canal.

It is not difficult to drill holes in artificial teeth "if you know how." Perhaps I can help you know how: Make the point of your drill very hard by plunging it red hot in paraffin. Sharpen the point obtusely or blunt. Put it into the hand-piece of your engine and, holding it firmly, turn slowly, keeping the place and the drill well supplied with sweet oil. Small carborundum wheels or disks are also good.

To be a good conversationalist we must remember that conversation means mutual rights in social intercourse. The person who persists in occupying more than his share of the time is selfish, egotistic, and sometimes a bore. He should learn good manners by allowing to his associates all that he claims for himself, and that without frequent interruptions. Then again he must concede that others have as good right to an opinion as he has.

We have evidently an antidote for even lockjaw. *Tetanus antitoxin* it is called. A lady by the name of Petrus, of Williamsport, N. Y., was rapidly succumbing to the dread effects of this peculiar disease, when by the use of this drug the symptoms *immediately* changed for the better, and the lady is on the road to entire relief.

The ignorant, thoughtless, rattling speaker is confident, assertive, demonstrative; a wise, reflective, close-thinking speaker is cautious, modest, unassuming. The one is bombastic, defiant, egotistic; the other has a modest, conciliatory, questioning style. The first is wordy, rambling, indefinite; the latter concise, precise and definite.

Dr. H. A. Knight, of Minneapolis, uses for frail teeth, especially bicuspid and cuspid, a mixture of cement and dry flakes of amalgam to nearly fill the cavity; this he finishes with an ordinary mix of amalgam. But why not use the cement without the dry amalgam, and the finish with a veneer of amalgam or gold? The cement will last as long as the metal, and the tooth will endure longer than with all metal, because the cement thus protected will be more impervious to moisture than without the cement.

FOR OUR PATIENTS.

WHEN DOCTORS DISAGREE.

He looked at my tongue and he shook his head—

This was Doctor Smart—

He thumped on my chest, and then he said:

“Ah! there it is! Your heart!

You mustn’t run—you mustn’t hurry!

You mustn’t work—you mustn’t worry!

Just sit down and take it cool;

You may live for years, I cannot say;

But, in the meantime, make it a rule

To take this medicine twice a day!”

He looked at my tongue and he shook his head—

This was Doctor Wise—

“Your liver’s a total wreck,” he said,

“You must take more exercise!

You mustn’t eat sweets,

You mustn’t eat meats,

You must walk and leap, you must run;

You mustn’t sit down in the dull old way;

Get out with the boys and have some fun—

And take three doses of this a day!”

He looked at my tongue and he shook his head—

This was Doctor Bright—

“I’m afraid your lungs are gone,” he said,

“And your kidney isn’t right.

A change of scene is what you need,

Your case is desperate, indeed,

And bread is a thing you mustn’t eat—

Too much starch—but, by the way,

You must henceforth live on only meat—

And take six doses of this a day!”

Perhaps they were right, and perhaps they knew,

It isn’t for me to say;

Mayhap I erred when I madly threw

Their bitter stuff away;

But I’m living yet, and I’m on my feet,

And grass isn’t all that I dare to eat,

And I walk and I run, and I worry, too,

But, to save my life, I cannot see

What some of the able doctors would do

If there were no fools like you and me.

S. E. Kiser, in Cleveland Leader.

A LESSON IN FAUNA LIFE.

"Has your cow lost her upper front teeth, father?" said my new son-in-law, as he observed her cropping the grass.

"I think not," was my reply. "She is only seven years old."

"She bobs her head up every time she takes a mouthful of grass, as though she had to cut it off with only her under teeth."

"I guess she uses her upper teeth also," I continued, a little mortified that my favored Jersey should be so abused.

"Come," I'll bet you a quarter she has no upper teeth to help her bite off the grass, and we will go right out and see for ourselves."

True enough, my poor cow was entirely destitute of prehensil upper teeth. I really felt badly for her.

"But," continued my young man as he looked around the pasture, "is it any wonder when we see the innumerable small pebbles among the grass? I venture to say there is not a cow or sheep in the pasture that has not ground these important teeth all away."

"Oh, now," I replied, "you are carrying your observations too much at random. Why, some of these sheep are not two years old, and yonder is Jersey's heifer eating only her second year's grass."

"Well," I would not turn my cow into such a pasture unless I was able to send her to a dentist for teeth that she could grind stones with."

"Why, father," broke in my daughter, "John is only chafing you on what you knew before he was born. My book on fauna life teaches me that cows and sheep, and many other runminants, never have upper front teeth."

And then I remembered, what every school child should know, that the upper jaw in front is covered with a very tough, thick, elastic gum, that with the under teeth serves a better purpose han a double set of teeth.

Oh, for more keen and accurate observation of common things.

THUMB SUCKING.—The best way to prevent thumb sucking is to wrap the thumb with a gauze or soft cloth, and saturate it with some intensely bitter substance like bisulphate of quinin. Should this fail, the hands should be tied. *Graham.*

THE SWOLLEN FACE.

Malcolm W. Sparrow, L.D.S., Toronto.

One day, some two years ago, a young woman whom I had often seen in the hotel at which I dine, came into the dining-room with a badly swollen face. Being on speaking terms, I made some jocose remark about the pleasures of toothache, when she informed me, with a satisfaction that piqued my vanity, that Dr. ——— (a distinguished M.D.) was treating her. Being somewhat sensitive, and remembering professional etiquette, I said no more. Three days later I was dining at the same hotel, with Dr. ——— (the aforesaid M.D.) sitting opposite, when I walked the young woman, with her face so badly swollen that her right eye was almost closed. As she remained out of hearing, I ventured to broach the subject to her physician.

"You are treating Miss ———?" said I.

This may have been cheeky of me, but I felt that I knew Dr. ——— well enough to make the query. I may add that the doctor was a practitioner of some twenty years' experience.

"Yes," said he. "It is a very bad case."

"What do you think it is?" said I, growing bolder, and at the same time wondering if the trouble could be some complication of which I was ignorant.

"Well, hem—ah—it is something out of the usual order," said he, with an air of great intelligence.

"Abscess of the antrum?" I ventured.

Now, I do not think it was presumption in making this venture, because I believe any dentist would have ventured the same remark, and with considerable less diffidence, perhaps.

"Oh, no; oh, no. Nothing of the kind," said the wise M.D., with great assurance, and not a little hauteur, "it is something very extraordinary; very extraordinary, indeed."

I resumed my soup with a feeling that I had been sat on.

The patient disappeared. Her physician, however, continued to take his meals, *sans souci*, at the same table with me, and having been sat on once, I was very careful not to place myself in a position to be sat on again, therefore our loquacity was exercised over everything but the girl with the swollen face. The next I heard of her she was in the hospital.

Several months afterward she came to me to consult about the possibilities of an artificial denture. The condition of her mouth was appalling. From the left central to the right wisdom, the teeth and the alveolus were gone. The soft tissues were in

a very angry condition, and there was a most obnoxious discharge of pus. Just then an artificial denture was out of the question. As she was under the physician's care, I told her to continue his treatment till the mouth was in a proper condition, then I would, if she desired, see what could be done for her. I saw her several times, at rather lengthy intervals, but it was not till a few days ago that I was enabled to take an impression. The brief history of the case is as follows:

1. An abscessed upper right sixth year molar, which was neglected till face began to swell.

2. The learned M.D.'s wonderful diagnosis and experimental treatment.

3. Abscess of the antrum, with all its pain and offensiveness.

4. A change of physicians (this man understood the case, but it was too late), followed by several weeks in the hospital, excruciating suffering, loss of teeth from upper left central to right wisdom, with continued suffering.

5. Necrosis of alveolus from central to wisdom, which came away in three pieces. I have in my possession one piece of bone which embraces the socket of the right central, lateral, cuspid and first bicuspid. I have also a model of the mouth as it is at present.

Last, but by no means least, one year and a half of treatment and waiting, to say nothing of the annoyance, inconvenience and expense, before the wound healed. During this time the patient was at home, some distance from the city, under the treatment of her physician.

The wound is now healed, with the floor of the antrum gone, and a fissure opening through the soft tissue, which permits air and fluids to pass through the nose from the mouth. How I am to succeed with an artificial denture is a problem which just now appears to be something akin to a Chinese puzzle.

Dominion Journal.

A golfer in South Africa left his property to be equally divided between two sons. Not being able to agree, they decided to let President Krüger arbitrate. He said to the eldest:

"You are the eldest, are you not?"

"Yes," was the answer.

"So you shall divide the property."

This pleased the elder immensely.

"You are the younger," continued Krüger to the other, "so you shall have first choice."

Golf.

THE NAGGING WOMAN.

A celebrated physician writes the following on nagging woman:

"Nine times out of ten the woman who nags is tired. One time out of ten she is hateful. The cases that come under the physician's eye are those of the women who are tired, and who have been tired so long that they are suffering from some form of nervous disease. They may think they are only tired, but, in fact, they are ill; and it is that sort of illness in which the will is weakened, and the patients give way to annoyances that they would ignore if in a healthy condition. The woman often suffers more from her nagging than the husband or the children with whom she finds fault. She knows she does it. She does not intend to do it. She suffers in her own self-respect when she does it, and, in the depths of her soul, longs for something to stop it.

"The condition is usually brought on by broken sleep, improper food, want of some other exercise than housekeeping and of enough out-of-door air and practical objective thinking. It is often the most unselfish and most affectionate of women who fall into this state. They are too much devoted to their families to give themselves a bicycle, for instance, or enough of any healthy exercise and diversion, enough of afternoon naps, perhaps. In such cases the husband is often to blame, because he gives nag for nag instead of looking straight for the fundamental cause of the trouble. There are many cases where such a woman begins by showing a longing for a little more attention, a little more tenderness, an invitation to a concert or cozy little dinner out with her husband. The man who does not take that as a sign is responsible for pretty much all that follows, and sometimes it amounts to something very like criminal responsibility."

The inconsistency of our spelling is thus given by the *Pittsburg Chronicle*:

Girls, don't listen to flattering beaux,
For while as friends they always peaux,
You'll find in reality they are feaux;
They flatter your eyes, mouth and neaux,
And sing your praise from head to teaux,
They take you to balls, parties and sheaux,
And are adepts at concealing their weaux,
Although as fickle as the wind that bleaux.

DOTS.

A lady's hair measures 40 or 50 miles.

The output of iron ore last year was the greatest ever known.

The new rifles for the German army fire ten shots a minute.

A good skater on good skating ground will cover 150 miles in a day.

The Chinese dress in white at funerals and in black at weddings.

If all the eggs of fish came to maturity, the ocean would be choked with their bodies.

Luck is a happy combination of accidents; but it requires brains to combine the accidents. *Puck.*

At Quito, the only city on the line of the equator, the sun sets and rises at six o'clock the year round.

The sources of platinum supply are the Ural Mountains, Brazil, Peru, Spain, Borneo and Ceylon.

To cement an aquarium use litharge, finest white sand, plaster Paris, in equal parts, rubbed up with linseed oil into a thick paste.

In Sitka, when an Indian wife has lost her husband by death, she goes into mourning by painting the upper part of her face a deep black.

The heaviest bell in the world is that at Moscow, Russia, which weighs 432,000 pounds. That in City Hall, New York, weighs 22,300.

The average life of women in France during the last thirty-two years has been thirty-eight years, and of men thirty-six years.

Smith—I was reading in the paper this morning about a Texas man who was struck by lightning while he was swearing. Remarkable occurrence, wasn't it?

Brown—Oh, I don't know. If lightning was to strike a Texas man when he wasn't swearing it would be much more remarkable. *Youth's Companion.*

The eyeball is white because the blood-vessels that feed its substance are so small that they do not admit the red corpuscles, except when inflamed.

To prevent the evaporation of water in fire-pails, it has been discovered that fifteen to twenty drops of oil will form a coating sufficient to obviate the difficulty.

Flour compressed into bricks to one-third the space of its usual form is said to keep very much better than wheat or its loose flour.

Let us keep in mind that *we* help represent the character of the profession for better or for worse. Would we have the whole profession what we are?

For chilblains dissolve an ounce of ammonium chlorid in half a pint of cider vinegar and apply frequently. A half pint of alcohol may be added to this lotion with good effect.

In one auction room in London during a recent single season over 500,000 birdskins from the West Indies and Brazil were sold.

Three-tenths of the earnings of a Belgian convict are given to him on the expiration of his term of imprisonment. Some of them thus save more money in jail than they ever saved before.

A piece of camphor is a pretty good barometer. If the gum remains dry, the weather will be fresh and dry, but if it absorbs the moisture and seems damp, it is an indication of rain.

A small piece of cheese and an electric wire form the latest rat-trap. The cheese is fixt to the wire, and the instant the rat touches the cheese he receives a shock which kills him.

To tell if eggs are fresh, drop them into basin of cold water. If they are fresh they will lie quite flat at the bottom. If they settle perpendicularly they are—well, usable; but, if they float, they are bad, and fit for no decent cookery.

It is said that every thread of a spider's web is made up of about 5,000 separate fibers. If a pound of this thread were required, it would occupy nearly 28,000 spiders a full year to furnish it.

No parental care ever falls to the lot of a single member of the insect tribe. In general the eggs of an insect are destined to be hatched long after the parents are dead, so that most insects are born orphans.

NOTICES.

VERMONT STATE DENTAL SOCIETY.—At the twenty-second annual meeting of the Vermont State Dental Society held at Rutland, March 16th to 18th, 1898, the following officers were elected for the ensuing year: President, Dr. J. A. Robinson, Morrisville; First Vice-President, Dr. K. L. Cleaves, Montpelier; Second Vice-President, Dr. H. Turrill, Rutland; Recording Secretary, Dr. T. Mound, Rutland; Corresponding Secretary, Dr. Grace L. Bosworth, Rutland; Treasurer, Dr. W. H. Munsell, Wells River; State Prosecutor, Dr. G. W. Hoffman, White River Junction. Executive Committee—Dr. C. W. Steele, Barre; Dr. J. E. Taggart, Burlington; Dr. J. A. Pearsons, Barton.

Thomas Mound, Rec. Secretary.

The next annual meeting of the North Carolina State Dental Society will convene in Fayetteville, N. C., on Wednesday, May 11th, 1898. All dentists in good standing are most cordially invited to meet with us.

The State Board of Dental Examiners will meet at the same place on Monday, May 9th, preceding, for the examination of all candidates for license to practice dentistry in this State.

C. W. Banner, Sec.

Annual meeting of the Massachusetts Dental Society convenes at Mechanics' Building, Boston, June 1st and 2d. This convention is expected to be one of the most successful in the history of the society. Extensive exhibits by leading supply houses, and completed operations, both in the mouth and on the model, by leading dentists and dental laboratories will be interesting features. Information to prospective exhibitors on application to F. S. Belyea, Brookline, Mass., Chairman Committee on Hall and Exhibits.

The second tri-union meeting of the Maryland State Dental Association, the Washington City Dental Society and the Virginia State Dental Association will convene in Baltimore, June 2d, 3d and 4th, in the Dental Department of the Baltimore Medical College, corner Howard and Madison streets. Eminent practitioners from many States will be present to clinic or read papers. The profession is cordially invited.

W. W. Dunbracco, D.D.S., Cor. Sec'y,

F. F. Drew, Pres.

Baltimore, Md.

DENTAL BRIEF.

VOL. II.

JUNE, 1898.

No. 11.

ORIGINAL COMMUNICATIONS.

AN ETERNAL CEMENT.

Discovered by an Ancient Dentist.

Dr. N. H. Wheeler, Oaxaca, Mexico.

For some time our ancient dentist had been quietly resting, after having set his office in order, so that everything would be in readiness for patients. His office was a small room, whose walls were of sun-dried bricks. At the corners were strong posts, ten feet high, which supported heavy poles, on which the roof was constructed, ingeniously placed and tied with strips of the maguey leaves, over which a thatch of grass had been woven, making it impervious to the torrents of rain which fell at regular seasons. The space above the wall to the roof was filled with reeds, interwoven to give sufficient light. On one side a bank of adobe had been built up to form a seat, which was covered with a stucco or cement, painted in brilliant colors. At the back, a broad piece of wood was set in the ground, the upper end having been hollowed out so as to give a rest for the head. Over this, and covering the seat, was a heavy white mantle bordered with the brilliant plumage of birds. The walls were covered with many of these mantles with their brilliant ornaments of feathers. The entrance was protected by rich adornments. The floor was of earth, which had been dampened and then beaten till its surface was like rock, while the skins of a number of wild animals were scattered over its surface. It was nearly noon, when a soft, firm tread announced the approach of some person, and a moment later the hangings at the door were pushed aside, and a man of commanding presence was in the room. His feet were protected on the soles by a piece of undressed skin, which was tied with thongs to his feet; a heavy piece of cloth was wound about his hips and fastened at the waist with a belt woven of many colors and fringed with plumage, while loosely flung over his shoulders was a square white mantle,

richly embroidered with brilliant plumage. Through the center a distinctive emblem was woven in many colors. A string of precious stones was suspended from his neck, while on his head was a waving mass of feathers about two feet wide by nearly three in height. These were of many hues, and so interwoven as to form his titles and distinctions.

Our dentist saluted him with great reverence, for he was one of the high caciques of the Zapoteca Empire, and as he was suffering from an offending tooth, which he desired to be separated from, he was invited to take the seat we have spoken of. The tooth was a lower molar on the right side, and after examining it, our dentist selected a stick of polished hardwood about ~~one~~ half inch thick and ten inches long, one end of which was carved to exactly fit the outside of the tooth, and placing this against the side of the offending molar, he struck the opposite end a sharp blow with a stone hammer, and the tooth fairly sprang from his mouth. After this was over, our dentist, as is still the habit of the craft, advised him to have his other teeth taken care of, and especially the second superior bicuspid on the left side, which had a cavity on its labial side. The Cacique decided to have it attended to at once. So our dentist commenced his work. His tools were of tempered copper, with drills of agates and other hard and firm stones; the one that gave shape to the cavity was cup-shaped at the end, in which a small quantity of fine sand was placed. This was then placed in the cavity and rapidly revolved, quickly making the cavity perfectly round, and smoothing the edges. After the cavity was properly prepared, our dentist addressed the patient, saying "I have just perfected my great discovery of a composition which will endure for ages, and as this tooth is prominent, I would like to try it. I can assure you it will be, in a few minutes, a perfect black, and will not change in the least in a thousand years, and will perfectly preserve the tooth from all future decay." The Cacique gave his consent, and in a few moments the work was completed, and he retired from the presence of the dentist, who made a record of the operation, so as to observe the result of his discovery. It read: "Cacique Quisquotl, Dec. 10th, 794, filling of my eternal composition."

Time passed; the Cacique died, and was buried in a tomb of rock, and an extensive mound was built over it, for he was one of the mighty and learned rulers of the Zapotecas. The dentist, also, passed to the great beyond, but his grave was neglected and forgotten.

For over a thousand years have they been forgotten. But now comes one who, in the interest of science and archæology, respects not the last resting place of the honored dead; and with pick and shovel he, in 1898, removes the dirt over the tomb of the Cacique. Ruthlessly he removes the stone from the entrance, and carefully examines the remains. All is dust; nothing is left of the mortal remains; even the bones have disappeared. Yet here is something; it is a bicuspid tooth, and from the upper jaw; and on its labial side is a filling; the walls are perfect; there has been no decay since the filling was put in. The filling itself is black and perfect as when completed. We have seen the tooth, and examined it, but was not permitted to learn what the the filling was composed of; but whatever it was, the workmanship and filling were good, and the "Eternal Composition" was a success.

Query: How many of our fillings will be perfect a thousand years hence?

Did not the ancients use and practice many things which we fondly believe are our own inventions? How long this tooth has lain in the ground none can say; it may be five hundred years, or it may have been two thousand. But that teeth were preserved by fillings in ages long ago there can be no doubt, and the operators did their work well and permanently.

PRACTICE IN THE TROPICS.

DR. WELCH:—Some months ago Dr. Purnell, of Mexico, came out in a severe condemnation of my idea of tropical treatment of teeth, and Dr. E. W. Bonwill, son of Dr. Bonwill, of Philadelphia, then took up my cause. As a personal favor I ask you to publish the enclosed marked portion of the letter, which will have a tendency to exonerate me and my method of tropical climate inhabitants, and the treatment pursued by me.

Dr. Luella Cool.

RANGOON, March 4th, 1898.

DEAR DOCTOR COOL:—I thoroughly realize that we (in the tropics) have many things to contend with which the majority of the profession have no idea. The natives of the tropics, in different parts of the world, have different constitutions, etc., which require treatments dentists at home never have in practice. And as I said in my article we are obliged to make different contrivances to do our work, which only necessity compels us to

think of. You know this, for you have had a taste of such a life in the tropics. I have been through Japan, China, Java, Straits Settlements, Siam, and am now in Burmah, and I have found that treatment which will cure one native will not another of a different caste of natives. You really have had a most terrible experience, and though I have never had the same, I can sympathize with you, for I know what it is to be away from all civilization and in a country where we have nothing but intense heat all the year round. I very often feel, as you do, that I would rather be poor and be in dear America again, than to remain and make a fortune (which is impossible). I feel sometimes I would give all the world, if I had it, if I could only get a breath of fresh cold air, and I feel as though I must take the next steamer and get out of it. People at home have no idea what we have to go through in these hot countries.

E. W. Bonwill, D.D.S.

MAKING ALLOYS.

Dr. E. N. Francis, Uvalde, Texas.

I have been thinking of writing you for some time regarding some experiments I have been indulging in with amalgam. I have used nearly all the alloys made in the United States, and some from Europe. I weigh the alloy and mercury, and no two fillings from the same amalgam are exactly alike. We all know that specific gravity interferes with the perfect blending of metals, and although this can be slightly overcome by shape of ingots and manner of casting, single fillings, correctly analyzed, do not contain the same proportions of metals as the analysis of a full ounce of the same alloy.

Certain combinations of metals produce certain results when used as amalgam, but a compound practically free from expansion or contraction can not be relied on when made from ingot filings or cuttings.

Now, Doctor, you may have tried my scheme, and I trust you will not think I am endeavoring to make suggestions to a man who has spent almost a lifetime making alloys—'tis only a suggestion, or whisper.

With a delicate pair of scales weigh correctly the proportion of silver, tin, copper, platina, or whatever combination you find suited to obtain certain results; place in capsules of assorted sizes (or of a size containing sufficient metal for an average filling). The proportion of fillings will always be the same, and

although it will make extra work for the manufacturer, it will place amalgam on an equal footing with gold as regards expansion and contraction, and the results will be such that prices can be easily adjusted to cover extra expense or work. What think you?

[Your suggestion that much care should be observed in the manipulation of making an alloy is decidedly pertinent. Merely to know the proportions of metals necessary to make a good alloy is not sufficient. The manner in which they are manipulated or compounded is quite as essential. It is only recently that Mr. Caulk, who has had long experience in making amalgams, made the remark to me—"Is it not singular that the same ingredients give such different results merely by the difference in the manipulation?"—ED. BRIEF.]

A PLEA FOR TEN-YEAR PRACTITIONERS.

Dr. Luella Cool, San Francisco.

Dr. Crawford's plea for uniformity relative to practitioners I heartily endorse. I saw a circumstance, while East, which strengthened me in this view. One day, while talking to a dean of one of the principal colleges, an old dentist from Cuba, driven out by the war, entered the college. As I spoke Spanish, he asked me if I was there to obtain the right to practice my profession. I replied, "No; I am too rusty to be able to pass the examination, though I have been in actual practice for over four years. I am all practical, instead of theoretical." He replied, "Yes; the same with me. I am an old man, and have forgotten all my book learning, and I want to be able to practice here again, as I am driven out of Cuba."

I could not help but realize the injustice of the laws. I think any dentist who can prove he is a competent dentist, with ten years' actual practice, should be entitled to open an office anywhere. What would I do were I not allowed to practice in my native country, California?

The law is good, but it should allow dentists of ten years' practice, with competent skill, the right to practice where they choose.

My dear old father-in-law, Dr. Geo. Coole (now deceased), one of the smartest and best-known dentists in the West, was a non-graduate, but I have seen fillings he put in thirty years ago, and as good as the day he put them in; and were he alive and

necessitated a change of climate, and depending on his profession for his living, he would be debarred or must pass a theoretical examination, which few old practitioners can do.

Does practical experience go for nought?

I believe in justice to all. A little leniency in our dental laws toward dentists who have had years of practice, will prove no injury to the profession.

A COMPLIMENT TO DR. BONWILL.

CHICAGO, February 25th, 1898.

MY DEAR DOCTOR BONWILL:—Permit me at this late date to congratulate you on the recognition you received in all parts of Europe on your trip to the International Congress last year. It is a source of pride to me that so many honors were conferred upon a well deserving American delegate. I thought I worked hard, but I have found more than a counterpart in you.

Hoping that your life and health may be spared for a long time for the benefit of science and humanity, I am most sincerely your friend and admirer, _____ *Nicholas Senn.*

CHICAGO, March 13th, 1898.

DEAR DOCTOR BONWILL:—Many thanks for your very appreciative letter. I am sure in saying what I did I only voice the sentiments of the whole medical profession. Next time you are in Chicago, I must see more of you. It will please you to know that the patient upon whom you saw me perform a very difficult operation for cancer had no unpleasant symptoms.

I do hope I will meet you in Denver.

Yours very sincerely,

Nicholas Senn.

A glance at the white schools and the negro schools of the South will show that the negro schools are teaching their pupils more of the practical needs of life and fitting them to earn a livelihood better than the white schools are. For every white technologic school the negroes have had a dozen with technologic and industrial features. Every year young men are turned out of the negro schools in the South who have been taught carpentry, shoemaking, printing, the general use of tools, scientific farming, in addition to the usual academic courses, and young women who are taught cooking, washing, sewing, dressmaking, nursing, and housekeeping.

ITEMS FROM THE DENTAL JOURNAL.

No man ever got a dollar's worth of experience for fifty cents.

A good surgeon must have an eagle's eye, a lion's heart and a lady's hand.

The one less inclined to take advice is generally the one who needs it the most.

O thou invisible spirit of wine, if we have no other name by which we can call thee, let us call thee—devil!—*Shakespeare*.

The *Kansas City Medical Index* mentions a bright lad in that section who, on being asked by his teacher the name of the most important canal in America, replied that it was the alimentary canal.

The following story is told of a young man who was addicted to the cigaret habit: He had smoked 1,200 packages, and wrote to the manufacturers to know what they would give him for the 1,200 pictures that had come with the cigarets. The answer of the manufacturers was right to the point: "Smoke 1,200 more, and we will send you a coffin."

A Western journal relates the following amusing incident: A dentist was working for a little girl who tried to be brave, but at times the tears would flow. Some days afterward a friend asked: "Did it hurt to have your teeth filled?" She replied, "Yes, it hurt awfully." "Did it make you cry?" "No," was the answer, "but it made the saliva run out of my eyes."

To the most pronounced degree keep in the procession of the profession, keep in front of the procession, in the band wagon if you can; if not, somewhere along the line even at the tail end; don't drop out—the doctor who drops out of the procession, or hesitates, is lost—in other words, make up your mind to keep ahead of the times rather than behind them.

An interesting figure has passed away from the French dental profession in the person of Madame Berthaux, of Soisson, the wife of the dentist of that town. This lady was seventy-four years old, and had been practicing dentistry for forty-five years, and as there were but few women in the profession at the commencement of her career, she may be said to be the first of French women dentists.

A curious fact has been observed of a man who died of delirium tremens. It was ascertained that the skull contained alcoholic vapor. A small opening made in the skull soon after death permitted the vapor to escape, when it ignited and burned with a bluish flame.

The first medical diploma conferred on a woman in modern times was given by the Medical College of Geneva in 1849, while in the dental profession Miss Lucy B. Hobbs-Taylor, of New York, has the distinguished honor of receiving the first dental diploma, having graduated from the Ohio Dental College in 1866. At present there are nearly three thousand women engaged in medical practice throughout the United States. In the dental profession there are only about one hundred women graduates in practice, with perhaps an additional hundred practicing under a permit.

RECENT PATENTS RELATING TO DENTISTRY.

John A. Saul, Patent Agent.

600,604, Device for swaging gold-plate for crown or bridge work, Wm. H. Baird, Burlington, Iowa.

601,057, Gas-administering apparatus, Wm. A. Johnston and A. W. Browne, Prince's Bay, N. Y., assignors to S. S. White Dental Manufacturing Co., Philadelphia, Pa.

600,924, Dental engine, Louis T. E. Methot, Boston, Mass.

601,178, Dental matrix retainer, Joseph M. Strout, Portland, Maine.

601,395, Dental engine hand-piece, John W. Gilbert, assignor to S. S. White Dental Manufacturing Co., Philadelphia, Pa.

601,396, Cataphoric electrode support, Merrill W. Hollingsworth, assignor to S. S. White Dental Manufacturing Co., Philadelphia, Pa.

601,703, Artificial denture, Edwin L. Chaffin, Helena, Ark.

Tipping by waiters is becoming a nuisance. It is so interwoven into the customs of Europe that a traveler finds it difficult to move without the annoying and burdensome expense; and it is becoming rapidly so in this country. Waiters in London have so reduced it to a system of robbery that with many of this "gentry" their income from this source is greater than their legitimate wages. Twenty-five hundred dollars a year is frequently the aggregate. Proprietors of hotels, restaurants and other public places are culpable for the existence of this evil, for it is not unusual for them not only to fill the places of porter and waiter without compensation, but actually to sell the privilege with the assurance that the tips will more than compensate.

CURRENT THOUGHTS.

EXTRACTION WHILE SWELLING OF GUMS AND TOOTHACHE.

Dr. John M. Parmale presented a symposium of views on the question of the advisability of "Extracting Teeth During Acute Pericementitis." He had sent a circular letter to a number of prominent dentists, asking the following questions:

Assume that a tooth is valueless and condemned to extraction; that it is in a condition of acute periodontitis, an abscess is forming or has formed.

Is it proper at such a time to extract this tooth?

If yes, why? Are there attending dangers?

If no, reasons, and course you would pursue.

The query is the result of a talk with physicians, who tell me they often have difficulty in getting dentists to remove teeth at such times.

Dr. Parmale said that about a year ago he had been asked by a physician why dentists would not extract a tooth when it was inflamed. At first he supposed that a tooth was meant that was in a condition that might be treated and the tooth be saved, but found that he meant a tooth that would have to be extracted certainly, and the physician had found that dentists objected to extracting such a tooth at once, but insisted on waiting till the inflammation had gone down.

As a result of that conversation, fifty letters were sent out, and answers received from thirty-four, as to whether it is proper to extract a tooth under the conditions set forth in the query. Affirmative answers were received from all but one of the thirty-four practitioners who responded. The substance of a number of the replies is here given:

Dr. C. E. Francis advised immediate extraction, "to check the trouble as soon as possible, and prevent more serious results, such as increased and more aggravated inflammation, suppuration, and the consequent breaking down or destruction of surrounding tissues." He did not believe there were attending dangers where the operation of removing the teeth is properly performed, and proper precautions are taken to allay any existing inflammation, and the alveolar cavity is rendered free from septic matter.

Dr. J. D. Patterson advised extraction of such a tooth, "because the risks are greater in leaving it in than in extracting; risks of prolonged suffering and the sequels of abscess." He believed there were hardly any attending dangers. His experience taught him that in the extraction of such teeth the inflammatory products, pus, bacteria, etc., are sometimes forced into new territory by the operation, and additional swelling is occasional, but this is temporary, and usually disappears.

Dr. Benjamin Lord stated "that it was his practice to extract, believing that the parts are more likely to be relieved than irritated by the operation; that it is the lesser of two evils."

Dr. G. V. Black advises extraction, and admits the danger of sepsis, but believes this danger is reduced rather than augmented by immediate extraction. He says: "I am not unmindful of the fact that very grave conditions have developed after extraction in such cases. I have also seen grave conditions follow ordinary extraction, the result of infection. Still the patient is placed in a better condition to ward off danger by the immediate removal of such a tooth, and the possible danger of a graver infection than the one existing at the time should not cause us to hesitate. Of course, proper precautions should be observed, and the after-treatment should be adapted to the conditions."

Dr. Wm. J. Rider says: "I can scarcely understand how any intelligent dentist can refuse to extract a tooth in the condition you speak of. A dead tooth is a foreign member, and inflammation and suppuration is nature's process to throw off anything dead, as tooth, bone, splinter, etc., from the system. By leaving the tooth in, if in the upper jaw, back of the cuspid, there is danger of inflammation of the antrum; if in the lower jaw, of forming a fistula, discharging on the outside. By all means take it out as soon as possible."

Dr. W. H. Morgan advocates the extraction of such a tooth, because, by the conditions laid down, no effort is to be made to ultimately save it. He regards the attending dangers as possible, but very remote; and in general he would extract.

Dr. H. B. Noble recommends the extraction of such teeth; has often done it, and never saw or knew of any serious results. In a few cases, where there was considerable swelling, an abscess formed and had to be opened, but he believes that extraction mitigated the pain.—*From Proceedings in Northeastern Dental Association in Dental Cosmos.*

THE POWER OF A PURPOSE.

Life is always interesting, as we have a purpose and live in its fulfillment. It is then possibilities stir within and clamor for expression; Hope looks out of her watch-tower, and paints her victory pictures with bright and positive colors; Faith rouses the faculties into intense activity, and Purpose opens definite plans and paths. Then achievements crown toil, and from these come successes, and new inspiration comes for larger and better things. This is ideal, but many make it real; for toil and triumph are twins. Others dream of it, but, because of difficulties, despair and drift helplessly on. Alas! so many drift. Though possessed of a splendid craft, and thoroughly appointed, they are helpless in the midst of the storm of life. They have a wealth of opportunities, but they do not lay hold on life with a definite interest and purpose.

Too often young men do not go to college—they are sent; they do not push their way into life's callings; they are waiting to be led. Indeed the sacred word "calling" seems to have lost its meaning, for they hear no inward, no divine voice calling them to appointed fields and kingdoms. Theirs is the downward look, limited in range and lacking in inspiration. And so the currents and under-currents carry them at will, up and down, back and forth—derelicts, useless and dangerous.

Purpose is better than impulse; impulse is fickle and fussy; purpose is determined and dogged. It is the character of the purpose that reveals the character of the man back of it and in it; or better, it is the character of the man that determines the power of the purpose.

Purpose, however tenaciously held and vigorously worked, may not always carry one to the goal, but it will carry him further on toward what he longed for than if he had never cherished and practiced it. But, on the other hand, it often does more for one than he dreamed or planned. Shakespeare went to London to retrieve his fortune, but the ardor with which he flung himself into the struggle carried him far out and up to the achievement of greatest fame and power. Saul of Tarsus determined to crush out Christianity; into this purpose he poured the vital energies of his great nature and overshot the mark, and through divine direction won his life-crown in the very way he fought so desperately to lose.

A purpose is the necessary condition of success. Nothing can take its place; not friends, or wealth, or talent, or genius, or

education, or office. These are powerless without purpose. They will do some things, prepare the way, and lend a helping hand; but purpose must be there, and be there strong and determined for great achievement to crown the life.

Two men went into the woods; one with a purpose to study bird life, its habits, its dress, and its song. So intent was he to catch every flash of wing and trill of song, he hardly noticed the flies and mosquitoes. The other went with no special motive, and saw and felt nothing but the intolerable flies and mosquitoes, and fled in utter disgust.

The motivated mind finds employment and joy in the task, and hardly heeds the difficulties. Purpose tunnels the mountain, bridges the chasm, uses difficulties and obstructions as stepping-stones, and marches on. The men who have filled the largest space in the eyes of the world, and who have achieved the most striking results, have been those who were actuated by some master-passion. Their soul was occupied with one great purpose, which subordinated everything else to itself. Men of "one idea." Though their soul may have contained many ideas, yet a single purpose directed, employed and animated them all. The great master-passion appropriated them to itself, and on the inner throne of the heart wielded an undisputed scepter.

"Not in the clamor of the crowded street,
Not in the shouts and plaudits of the throng,
But in ourselves are triumphs and defeat."

F. C. Hubbard in Self-Culture.

HOW SHALL WE BEST INSERT A GOLD FILLING?

Dr. Arthur Galusha Smith, Peoria, Ill., in Illinois Society.

It has required years to bring the gold filling to its present degree of usefulness and perfection, but its history, though interesting, does not concern us. What we should strive to find out and thoroughly understand is, what constitutes, to-day, the best gold filling, and what is, all things considered, the best means of producing it.

I need only allude to the two distinct kinds of gold used in fillings, namely, "soft" and "cohesive." A "soft" foil, strictly speaking, cannot be rendered in any degree cohesive by annealing. However, many of the so-called soft foils now on the market will develop a certain amount of cohesion when annealed. A "cohesive" foil on the contrary is rendered so sticky by annealing that a mere touch will unite two pieces, while a blow or

heavy pressure will make them become as if of one piece. These differing properties of the gold as it comes to our hands from the dealers, are fixed and unchanging and must be carefully borne in mind, as they make the two kinds of gold almost exact opposites in working properties.

However perfect our preparation, however neat and beautiful the finish of the filling, if at any point we fail materially in our adaptation, much of our work is sure to fail, and when we see it as the years go by, we ourselves know that we have failed and fallen short of what we should have accomplished; even though our patients are satisfied that it was "all their fault," and cheerfully have the work replaced with faith in us unshaken and unwavering.

The teeth are by nature designed to withstand pressure, but not blows.

Dr. Black, two or three years ago, showed us conclusively that it was almost impossible for a person to injure the teeth by exerting the extreme force of the muscles of mastication, provided that force be exerted gradually; but how different is the result of the same muscular action when we bite suddenly on some hard substance and thus give a blow to the teeth.

In other words, we recognize the necessity for avoiding blows on the teeth and instruct our patients to avoid them as far as possible, and yet we ourselves make such large use of them in condensing gold. Is not this an illogical position?

I have seen many large and beautiful fillings that were made with the mallet, but in many of them there have developed large pits or soft places, showing the condensation was not even. Again, many of the teeth containing large malleted fillings are so badly checked as to be beyond repair as soon as the first chip falls out of the cavity margin.

Loosening and soreness of the teeth is always the immediate result of any considerable malleting, and this sometimes never entirely subsides.

With the use of hand pressure all these disagreeable sequelae are much lessened or entirely done away with. How many times after the insertion of a large gold filling have my patients remarked in surprise "Why, doctor, that tooth wasn't even sore the next day."

Finally we have to consider the operation from the patient's standpoint, and here I can speak with feeling and appreciation and utterly free from bias, for I think that I have had gold fillings put in by almost every known process except that of the

Herbst burnishers, and from the patient's standpoint I must say that no method of condensing gold with which I am acquainted is so free from discomfort and objectionable features as hand pressure. There is no noise or jar of any kind connected with the operation, and this fact makes the nervous strain on the patient much less, and this attitude of ease and rest in the person on whom we are working adds much to the rapidity and freedom from tension with which we do our work.

My patients are warm in their praises of hand pressure, and it was largely this fact that induced me to persist in using it and finally rely on it altogether. When they have a filling done in my office for the first time, they almost invariably express the greatest relief and astonishment at the absence of what they usually term the "pounding" or "that little thumping machine." At this time, when we are ostensibly striving so earnestly to take away those things which are sources of discomfort to our patients, can we afford to overlook anything which is so simple, so effective and so free from discomfort?

No one mallets a filling from the very start. A variable amount of hand pressure is necessary to carry the first few pieces of gold to place, whatever method we use afterward.

If this is more effective in carrying gold to place against the walls of the cavity at the start, can there be any reason why it will not secure a better adaptation throughout the entire operation?

I fully realize that no two men work alike, and that a method which is a success in the hands of one operator will be much less satisfactory in the hands of another; but I do believe that, with all of us, this hand pressure condensation is worthy of an earnest trial.

I formerly used the mallet as exclusively as any man possibly could, and considered everything else too utterly out of the question, to be even seriously considered, but I came in close personal contact with a most expert operator who was an enthusiastic advocate of hand pressure. The beautiful results which he achieved, and the ease with which he worked in cavities which were difficult of access to me and my mallet, set me to thinking and finally to experimenting with that which I had formerly been content with ridiculing. It required considerable time for me to get the muscles of my fingers trained so that they could stand the long continued exertion, and I had better pause here before I finish, and say that it has not been a question of the easiest way to do a gold filling that I have been considering, but this

was the only difficulty encountered, and it has long since disappeared.

Some day, when you have a cavity that is difficult to reach in a satisfactory manner with yourallet—and you won't have to wait long for this opportunity—and rather small, just try hand pressure for awhile. If you get tired, take up yourallet and finish out with that, but keep on trying till your muscles become thoroughly accustomed to the work, and it will not be till then that you can pass a fair judgment on the method, and I am sure that you will do with yourallets just what I did with mine—let them lie in the drawer unused for a year or two, and finally discard them altogether.

EXTRAVAGANCE.

It is our boast that we are a free people; but if our common sense and insight into the fitness of things do not come to our rescue, we shall be lost. The effect of our frivolous mode of living and general thriftlessness, some one has admonished us, is telling on the national life. There is a want of stability, dignity, repose, about the American that makes him like a child who only looks for the gratification of the present moment—a child with great capabilities and exuberant spirits, yet uncontrolled and untrained.

What else can be expected from the home training of the children? Are they taught industry, economy and consideration for others? The father is too busy to give time or thought to his children, or to get any enjoyment out of life. His only duty, in too many instances, is to earn money for his wife to spend in furnishing her house as handsomely as her neighbors, to dress herself well, her children far better than their circumstances will justify, and to entertain as elegantly as Mrs. Blank; for which she also slaves and economizes in things essential, which cannot be taken note of by the world. For these things she grows old and wrinkled long before her time.

The mother, nowadays, is the slave of her children, and not, as she once was, their companion and monitor. If Dolly comes home from school discontented because her schoolmate, Lilian, has a lovely new frock, trimmed with lace, every effort is made to get Dolly a new frock, which will rival, if not eclipse, Miss Lilian's. If Johnny says: "Mat. Johnson has a bicycle, I want one, too," it is quite reason enough for getting him one, how-

ever inconvenient it may be, even if it has to be done on the instalment plan. The thing is to get what you want, however it has to be done. Self-gratification is the lesson taught American children; not self-control and wise economy. With such training, what are the men and women of to-morrow going to be? The faces of American women, foreign critics tell us, bear the traces of overwork and worry; they have an anxious, careworn look, that seriously detracts from their comeliness, renders them unattractive in spite of their good features and frequent refinement. When one looks at the root of the matter, it will be found that all this is caused by the constant struggle for something better than one can afford—rivalry with one's neighbors. Erase this from their lives, and they would be comparatively care-free and happy. The social struggle, the striving to do as others do, rules them, leaving neither time nor thought for simple pleasures. It pervades the race and fascinates them like gambling; in it money and time are wasted.

We are continually substituting tinsel and glare in life for worth and true enjoyment. Waste of life and material is going on, for the gratification of a petty ambition that is never satisfied, leaving nothing but bitterness of spirit and discontent in its path.

The Germans may, in our estimation, be slow, but their sound common sense, carefulness and thrift give them a depth, a solidity of character, that we, in the main, lack. Wisconsin is essentially a German State, in that the German population exceeds the American. Everywhere in the State can be seen the results of German thrift and economy. They are the rich people, their children will be the educated people, their grandchildren will be cultured and lead society, without social strife or individual extravagance. They will spend what they can easily afford, enjoy social life for the pleasure of each other's society, for the stimulus of congenial thought, for the love of beautiful things in art and nature, that involve no sacrifice of peace or principle to attain. These things can be enjoyed by the poorest if a little thought were given to ways and means. All true social enjoyment is lost with us in the effort to appear fine; to be stylish in dress and furniture; to show off. This is the first and most widespread cause of extravagance. The second is an uncontrolled desire to get what we want, regardless of consequences. The third cause is a moral laxity that seems to be infectious, the result, in the main, of a lack of moral training, with a levity of disposition, which, in spite of our seriousness, in most things is being infused into the national life.

We see all these phases exhibited in politics, in business, and in social life, and even in the management of our churches. In the latter it is so patent as to be a reproach to religion. The churches run in debt even more recklessly than do private individuals, not for charity or mission work, but for material comfort, elegance, fine music and other pleasant but not necessary things. To meet these varied devices for raising money, bazaars, fairs and concerts are resorted to, together with suppers, dances, even card parties and other questionable modes of money-making entertainment. They do not even raise the money and then buy what they want, but get what they want, and then try to raise the money to pay for it. Ministers, if they do not actually encourage, they countenance this sort of thing, and then preach the Gospel of simplicity and self-denial. When we see this state of things, we ask where shall we go to learn honesty and the elementary virtues? They are not taught in churches or in the schools, neither are they inculcated at home or acquired on the street. The imperious need of the day is for someone who will teach us thrift and economy—the wise practice of getting money before we spend it—the thrift of putting a little by for the days when sickness, reverses, or old age come on us. What we also want is individuality enough to dictate our own modes of living, in accordance with our tastes and means. No nation ever lived in a more beautiful, bountiful land than ours, none ever teemed with a people so full of noble impulses, with the opportunities of individual development so high and great; yet, like the “little rift within the lute,” this widespread want of sound moral integrity, in regard to the income and out-go of money, may, unless checked, work our ruin. A sound financial basis, and thrift and good sense in this direction, and control, should be sought for every institution, public and private.

Caleb Clark in Self-Culture.

Sick headache is often caused by eating too much and too rich food, and too little exercise. Substitute a simple, plain meal and a dessert of fruit for so much meat and so many rich dishes, followed by rich pastries and puddings, gravies and cake, and earn what you eat “by the sweat of the brow,” and you will have less headaches and other disorders. Nature abhors lazy folks, and still more laziness accompanied with gormandizing. Dentists, whose work is sedentary, do not require so much food as hod-carriers, and they cannot digest such rich food.

DENTAL ETHICS.

Dr. F. J. Capon, Toronto, Ontario.*

Ethics is the doctrine of morality, that philosophy which treats of human duties, their grounds and obligations.

The first duty to yourselves and to your patrons should be to aim high, for a low aim in our profession is more criminal than an honest failure. Conscientiousness should predominate, direct and guide us in all our work.

Without the resolution in your hearts to do good work, so long as your hands have motion in them, and to do it whether the issue be that you die or live, no life worthy the name will ever be possible to you, while in once forming the resolution that your work is to be well done, life is easily won, now and forever.

John Newton said: "Ofttimes the hindrances that lie in the path of duty may be compared to the toll gates on our turnpike roads—they are kept shut till we are just on them, and then fly open, as it were, of themselves. And that is time enough. If they had been opened a week beforehand, we could not but have gone through at last."

In these materialistic days it is hard for many men to rise to a truly professional standard. The idea has crept in that the most successful man is he who accumulates the greatest wealth, regardless of methods. The difference between a tradesman and the really professional man is that the former makes the dollar his highest aim, the chief end; while the latter makes the services he can render to humanity his highest aim, the chief end.

I know the temptations to stray from professional rectitude are numerous and strenuous. When a young man is making a struggle for bread a dollar bill looks as large as a horse blanket.

If the young man has moral stamina, if he has world foresight, he will realize that in professional life honesty is in every sense the "best policy." But to the young dentist who sits in his office and waits patiently but vainly for the "footsteps on the stairs" of the coming patient, it must seem indeed hard that his neighbor, and, possibly, colleague, who advertises "Real painless dentistry," "full sets for three dollars," "free extraction," etc., has his office constantly crowded with patients, and perhaps the young man wonders if it really pays to live up to the highest standards of professional morality.

A few years ago I felt it my duty to act as a missionary to

Dr. F. J. Capon is brother of our excellent dentist of Philadelphia, who is our contributor on porcelain facing of teeth.—Ed. BRIEF.

save a young colleague of mine who had fallen into evil ways, for "money is the root of all evil." I asked him, "Why did you sacrifice professional pride for the mighty dollar?" He was a man of few words; he threw out his chest, took a haughty stand, thrusting both hands to the depth of his trouser pockets, then withdrew the right hand slowly, bringing with it the pocket lining, showing its impoverished condition, remarking at the same time: "This is my professional pocket," and then he brought forth from the left pocket a huge roll of bank notes and said, "This is my advertisement pocket."

Then, why not turn out cheap and nasty work for quick returns? Why not extract for the dollar the teeth that rational practice would save? Why not do many things just a little "off-color" for the sake of coin? I can sow my "wild oats" now and come back to correct living and take things easy. To such a young man, when he asks your advice, it is your duty to impress on his mind that honesty and plucky persistence bring rich rewards.

The professional man would rather render his services in a professional manner and receive no fee, than to render them unprofessionally and receive money. This, to some, may seem ideal, and not to be found among the men of any profession today. Well, the proportion may be small, but in the proportion that these professional men are to be found, the profession is reaching its highest aim.

The tradesman, nor the "professional" advertising writer, cannot understand these things. They are above them.

The dental profession is beset with this temptation to advertise as other professions. There is more intimacy with the trade side. The two come closer together.

We are tempted by our patients to do unprofessional things. They wish to dictate the manner of operations. Some will claim the right to say what we shall do. If you aim for a professional plane, never lose your dignity, and command respect. You must have the will-power to assert your authority and the nerve to see a patient walk out of your office in search of a less scrupulous man. This stand may mean dollars lost at the time, but to return in the future with added respect and confidence.

Morality, moral purity and integrity of character are also necessary if we would win the confidence and respect of our patients. At this period of psychological study we are subjected to such searching scrutiny, we become so sensitive that a moral taint of any kind is quickly felt or detected at a glance, and an

instantaneous aversion or repugnance is the consequence. Who has not experienced this feeling on coming in contact with some persons, though they may be comparative strangers? It is like that of the blind man when he feels the presence of a second person in the room.

How much more keenly must such aversion be intensified in the close personal relation that necessarily exists between the operator and the patient, if he is not morally pure!

Then dental ethics embraces the often and so aptly quoted "Cleanliness is next to godliness." The most scrupulous care and attention must be given to personal neatness in every detail, especially in regard to the hands, nails and breath.

The morning bath is as essential to the hygienic dentist as the sterilizer is to the instruments he uses in the mouth of his patients. The operating coat should be suitable in texture and color and always neat and clean. I favor white linen—when soiled it can be seen.

You should endeavor to have the office and operating room an atmosphere of immaculate neatness, and thorough ventilation should prevail. It is indispensable that no odor of medicaments be detected, either in the apartments or about the person of the operator. A waste cotton receiver will prevent the carpet under your feet from becoming saturated with odious combinations. Nothing but the cleanest napery and the most thoroughly cleansed, sterilized and polished instruments should be used, especial care always being given to the mouth mirror. As few as possible of the necessary instruments and appliances should be exposed to view, thus avoiding undue suggestion of the operation to the patient. With the constant multiplicity of equipments there is also a danger of the operating room having the appearance of a machine shop. One of the most helpful and essential factors of a well-appointed office—one that greatly facilitates the operations, that attends to the appointments and cares for the instruments, and gives tone to the whole place—is the neat, refined and well dressed lady assistant. In my estimation, she is an indispensable adjunct to our work.

Ethics require that an operator should have professional skill and ability. Nothing is of greater value and importance to the operator in this direction than the acquiring and possession of a gentle yet firm and sure touch. For what can weary and excite a patient more than the uncertain or unskilled handling of sharp instruments, where a sudden slip might lacerate the pulp or inflict a wound on the surrounding tissues? Much valuable

time may be wasted by an unsystematic arrangement of the necessary instruments for daily use—or from an unfamiliarity with and an unskilled use of them—and also by an indecision in quickly selecting the one best suited for a particular case. A good rule is to have a few carefully selected instruments and to learn to use them well. The awkward, noisy and unskilled manipulation of the instruments not only causes fear and annoyance to the patient, but also cruelty. We are charged with cruelty on every side. “I dread to enter a dental office,” “I like you socially and as a friend, but I hate your profession,” “Why did you ever engage in such a cruel calling?” are familiar expressions.

So general is the charge, so universal the complaint that little children, who do not know the meaning of the word “dentist,” have to be dragged across our thresholds, and with quivering lips, pallid with fear, breaths tremulant with dread, beseeching eyes often filled with tears, beg for mercy before they reach the chair. You all know what I say is true; you hear it in society, at the club; we are caricatured in theaters, written about in papers. It is the same cry everywhere. We should try to obviate this cruel pain by administering anesthetics, local or general, by being gentle in our touch, soothing in our words, using the power of suggestion which will create a wonderful influence on a nervous patient. What pain is severer during the period of its duration than that endured in the extraction of a tooth? What pang more unendurable than that caused by the thrust of steel on an inflamed pulp? What will send shivers down one’s back faster and colder than burring hypersensitive dentin? What will bring profanity to the lips of real gentlemen and tears to the eyes of women sooner than the grinding of carborundum wheels in the preparation of teeth for crowns? Who likes the prod of the broach against a root’s pulp?

There is not a thoughtful man but knows that thousands of teeth are sacrificed daily in “painless dental parlors” and tens of thousands of dollars kept from the pockets of conscientious, reputable dentists, because of the dread of such suffering as I have described.

Tact, in my opinion, is an important factor in meeting our patients, and in successfully allaying any fear or apprehension that naturally arises with the patient. A quiet, reassuring demeanor, and a few sympathetic words, help greatly to accomplish this object; while nervous movements, brusque manners, harsh or careless expression, tend—especially with women and children—to create distrust and antagonism, and will repel the patient.

Another important but delicate point to emphasize is the need of our patients to understand the necessity of constant care of the mouth, the important and constant care of our little tender patients with their troublesome deciduous teeth.

In caring for temporary teeth, the heart should be full of love; in managing the permanent ones, the head should be full of wisdom.

The late Sir Benjamin Richardson, of England, thinks: "That the normal period of human life is about 110 years, and that seven out of ten people could live that long, if they lived in the right way. They should cultivate a spirit of serene cheerfulness under all circumstances, and should learn to like physical exercise in a scientific way. A happy disposition, plenty of sleep, a temperate gratification of all the natural appetites, and the right kind of physical exercise will ensure longevity to most people."

Practicing dentistry, like most indoor occupations, has its detrimental effects; it tends toward short life instead of longevity; and it becomes our duty to counteract the injurious effects that our calling produces. In a general way, we may say that dentists look pale, nervous, dyspeptic; have an enfeebled circulation; acquire a contracted chest, etc. When we take into consideration our contracted positions at the chair, the inhaling of poisoning exhalations of our patients, as well as the general nervous strained condition that we are in while doing delicate work, and all the time trying not to hurt, it is not strange that these should produce an enfeebled condition of health. When we ponder this fact, we must see at a glance the desirability, yes, necessity, of taking regular out-of-door exercise.

For years I have made it a point to work in a gymnasium to keep an erect position, and have endeavored to be out of doors at least two hours of the twenty-four, either walking, riding horseback, bicycling, curling, canoeing or yachting—in fact, I am held to be a genuine sport.

Though I have spoken of good health last, I believe it is of almost the first importance, and in recapitulation might say that some of the important essentials of a successful practitioner are, first, health; second, tact; third, professional skill, conscientiousness and ability; fourth, integrity and moral and personal purity; fifth, a high aim.

Odontoblast.

Lettuce is good for insomnia.

ADAPTATION AND RETENTION OF DENTURES.

A. O. Hunt, D.D.S., Chicago.

Atmospheric pressure is one of the forces claimed as being essential in retaining the dentures, the pressure being produced by a central chamber in which a vacuum is produced. The force exerted is estimated to be from a few ounces to fifteen pounds to the square inch. This claim is entirely faulty. A vacuum cannot be produced in this way, and if it could, would be of only short duration. Again, if it were possible to get the benefit of such force, it would be better to have it extend over the entire surface of the denture than to confine it to a small central area. Still further, it cannot be applied to lower dentures successfully.

Capillary attraction or adhesion is another force mentioned as all important in the retention of the denture. As whatever force of this character that might be utilized is based on the laws of cohesion and adhesion, the limit of its operation is so small that it would be insensible in an artificial denture. If, however, the force was greater, it would be better that it should apply to the whole surface than to a part of it.

The conditions presented in the upper jaw are peculiar many times. The idea that a mouth that is flat is more difficult than a deeper one to secure good results should not be entertained. In general, in from six months to a year after the loss of the teeth, there are not so many difficulties in the way of good results. After a denture has been worn for a long time with only a partial antagonism with a few apposing teeth, the difficulties are multiplied. So also when the mouth is edentulous and no denture has been worn.

When the best model obtainable is at hand, a careful digital examination should first be made of the surface of the mouth, to locate and define the depth and form of the soft spaces within the area to be covered by the plate. These spaces and their form and depth should be outlined on the model, the depth indicated by figures, as it varies greatly in corresponding locations in the same mouth. The model should then be scraped away in various places to the proper depth so that the denture will bear evenly over its whole surface, keeping in mind that the central or palatal portion will not change materially while the alveolar ridge is constantly changed by resorption.

For the upper jaw there are five localities where the denture will find a firm and reasonably permanent rest without excessive pressure on the parts—the palatal surface, two on the labial sur-

face immediately over the region occupied by the cuspids, and two over the malar processes extending to and above the maxillary tuberosities.

For the lower jaw there are four localities for a firm rest for the plate—two on the labial in the region of the cuspids and two on the posterior buccal margins between the summit of the alveolar ridge and the attachment of the buccinators to the inferior maxillary. The greatest interference with a denture being retained in its place, as they are usually constructed, consists in the action of the muscles on the margins of the plate to push it either up or down, or oftentimes the posterior margin of the upper one extends up on the soft palate and is thrown down by its movement; or in the lower denture the posterior ends of the plate are so long that in opening the mouth the stretching of the tissues in front of the ramus move it forward.

While all the muscles may throw a denture out of position, yet by a proper form of the margins, some of them may be utilized as the most important force for retention; notably the buccinators and the orbicularis oris. A careful examination of the attachments of these muscles should be made, and in shaping the margins their movement should be opposed to each other in such a way that they will be compressed on the denture and hold it firmly. If improperly made the patient never gets the use of dentures till they learn to hold them in place by the buccinators assisted by the tongue and the orbicularis oris.

With an even pressure over the entire surface of the plate in contact with the mouth, a free movement of the anterior frenum and the anguli oris muscles, the anterior border of the buccinator, the compression of the buccinator at the posterior borders and the compression of the orbicularis oris at the anterior portions, a free movement of the lingual and sublingual muscles on the interior surface of the lower denture, with plenty of room for the tongue, accompanied with a stable pressure on the hard or permanent parts of the mouth, will produce a perfect adaptation and retention of an artificial denture. *Dental Review.*

The latest development of the insurance business is interesting. You can buy braces which entitle your next of kin to \$500 if you are killed while wearing them; and there are also hats which entitle your heirs to a similar amount if you are found dead with one on your head.

IS THERE ROOM AT THE TOP?

Dr. Lee S. Smith, Pittsburg.

As every building depends on its foundation, so success, even as looked at from a financial standpoint, depends first, last and always on character, and here comes in the duality of true success and the necessity of considering something more than simply dollars as the acme of being. And here also comes out another truth, viz., we may succeed in accumulating dollars in our profession as in any other calling, and yet not be at the top.

Only recently a member of the dental profession said to me: "Oh, well, after all, dentistry is a trade rather than a profession. A dentist does not rank in society with other professional men." If this is so, whose fault is it? It is the fault of the individual and not of his profession, and I say this without fear of contradiction.

There is no man, I care not what his calling, but whose rank in society is determined almost solely by himself. The man who wears clean linen, keeps his clothes brushed and his shoes polished, and walks erect, putting his heels down with a snap, both commands and demands the respect of his fellow men, by asserting his respect of himself. Then character enters in as an element of success in another way. It secures the confidence of his fellows, assuring them of his ability and disposition to carry out his contracts, of whatever kind.

Much has been said as to the necessity of having and keeping a tidy, clean office and office furnishings, and when we remember the nature of the occupation of the dentist, and the fastidiousness of many of those from whom he must expect his best patronage, too much stress cannot be placed on this subject.

Then again comes the necessity for thorough work. One object should ever be uppermost, and that is to make his patients think that in so far as their views and wishes are concerned, he is the best dentist in the world. This can be accomplished only by doing the best work that can be done, and done in the most easy and pleasant manner possible as to its effect on the patient.

Our professional relations with our patients are not of the most pleasant and agreeable at the best, but they can be much modified by gaining the implicit confidence of our patrons in our ability to do the best work, and to do it with the least pain.

The dentist who starts out with a firm determination to carry out all these necessary requirements, has made a good start upward. But if the upward march is to be sustained and

the climb continued, he must attend also to the business side of a professional life. A man may have the ability to make money, that is, to earn it, but if he lacks the qualifications of managing his affairs in a business-like manner, he may utterly fail of real success. In this particular I am sorry to say very many otherwise able and worthy men fail, and especially so in the professions, and in ours fully as much as in any other.

In this part of a man's life, character is all important—indispensable. How can I express myself, so that I may make you understand how necessary I consider proper care and qualifications in this direction? How shall I set up a model so that you may work by it? Let me try by laying down a few general rules.

First. Whether a man has a dollar in the world or not, from the very beginning he should make his word in all things as good as a bond. Never fail to keep a promise without a good and sufficient reason frankly and honestly stated.

Second. Live within your means. Never think that it is necessary to do as others do if you are not able. Such a course is the cause of more failures in life than any other.

I once asked an aged man, for whom I had the greatest veneration, love and respect, a minister, how he managed to rear six children and always have food and clothes for them, on the small salary he received. "Why," said he, "there is no secret about it. When we had money we bought, when we had none, we managed somehow; we lived within our means and did not go in debt."

It is deplorably true that many people think that professional men are all rich and therefore do not need money, and there are thousands who rank the dental profession among the bloated bondholders, and much of this opinion is caused by the exceedingly loose methods prevailing among professional men regarding the business side of their lives.

I have often heard dentists say, "Such a man owes me a big bill, he is perfectly good, but I dare not ask him for it, for fear of losing his patronage." This is a grave mistake, looking at it even from a solely selfish standpoint. There is no honest man but will respect you all the more for asking for your own, and more than that, there are many of the best business men who never pay bills except on demand. True, this is not as it should be, but it is a fact, and facts are stubborn things. Then again, after you have earned the money it is yours, and you should have it. It is a deplorable fact that many a rich man has utterly failed in business simply because others had all his capital.

I would advise every young man, as well as old practitioners, to adopt strict business rules, to carefully keep a complete set of books, render statements every month or quarter, as regularly as any business house; if not paid within a reasonable time, send a request for payment. If this be not heeded, have a call made. Nothing will aid you like establishing a reputation in this line, and it will be respected by all right thinking people.—*Digest*.

THE CARE OF CHILDREN'S TEETH.*

Dr. J. R. Lowe, Newton, Kas.

To determin what to do with the teeth of little children is often very perplexing to a conscientious dentist. Most children need our services often; and they need them badly. There is no decade in the life of a man or woman, no time "from the cradle to the grave," when the teeth need more painstaking care than from the age of three to thirteen years. We are inclined to suspect a disposition on the part of many in our profession to shirk their responsibility in this particular line of practice. The reasons for this are obvious. It requires much time and patience, taxes our nervous energies very severely, and is not always remunerative. We should remember, however, that the little boys and girls of to-day will be the young men and women of to-morrow, and if we successfully minister to their wants in childhood, they will appreciate us when they are older, and mothers, as a rule, are not slow to appreciate what we do for the little ones.

The question "What should be done with the teeth of children?" often resolves itself into one of "What can be done?" Much depends upon the tact of the operator and the disposition of the child. Some children are kind, confiding, and willing to do whatever we request of them; while others are by nature antagonistic, rebellious, and unmanageable except by force.

The president of the Illinois State Dental Association is reported to have said in his annual address last spring that a dentist should have the head of a scientist, the skill of a surgeon, the heart of a mother, and the touch of an angel. The last two qualifications are especially requisit when it comes to dealing with children.

"The American System of Dentistry," out of over three thousand pages, has just three pages relating to this subject. True, there is considerable space devoted to "diseases incident to

* Read before the Southern Kansas Dental Association, December 28th, 1897.

the first dentition," but these usually come within the domain of the medical practitioner.

When the child first comes under our care it is usually three of four years of age, the immediate occasion of the visit being a case of odontalgia, whereby the entire household has been kept awake a goodly portion of the preceding night. The parent demands immediate extracting, of course. Just here the dentist has a golden opportunity to impart some wholesome and much-needed advice. Fortunate for the child if he makes the best of the opportunity.

The first thing in order, of course, is the relief of pain. Beyond this but little should be attempted at the first visit, except to cultivate the child's acquaintance, get him interested, and put him in such a frame of mind that he will not be unwilling to come a second time. This should be the end of the first visit, as far as the child is concerned. How about the parent? If the dentist is of smooth address, and if he possesses a goodly fund of the information which "comes handy" on all such occasions, he can in a comparatively short time arouse the parents to a sense of their responsibility and send them away with much to reflect on pertaining to oral hygiene, the importance of the deciduous teeth, the effect they have on the general health, the irregularities of the permanent set caused by injudicious extracting, and especially the time for the advent of the sixth year or first permanent molar. For whoever knew a parent who did not mistake this tooth for one of the deciduous set? A child has just twenty fingers and toes, and also just twenty temporary teeth. When this analogy in numbers has been pointed out to the parents, they will very likely remember it, and by counting will be enabled to know when teeth other than those of the deciduous set have made their appearance.

Notable among the exciting causes of caries in the teeth of children is the habit of eating at irregular times (between meals). When this habit prevails no attention is paid to keeping the teeth clean.

A great predisposing cause is the high pressure under which we live, the lack of sufficient outdoor life, imperfect digestion and consequent imperfect assimilation. The bicycle, however, has remedied this evil to a great extent. Many children start to school too young, and many lads and lassies have a notion, which is also shared by their parents, that their reputation for "smartness" will be forever established if it can only be said that they were quite young when they graduated from the high

school or academy. How much more to their advantage will it be if, when they have attained mature age, it can be said of them that they possess sound minds in sound bodies. Who will then know or care whether they "crossed the Alps into Italy" at the age of seventeen or at the age of twenty?

We have said that but little should be attempted at the child's first visit to the dentist beyond the relief of pain, interesting the little one, and getting his confidence. How can this be done? By a few rides up and down on the operating chair, by explaining the use of the mouth-mirror, initiating the patient into the mysteries of the dental engine, or any other method that may suggest itself. How can we keep a child's confidence? Tell him the truth; do not make promises you cannot fulfil. If the work to be done is going to cause slight pain, tell him frankly that it will hurt "just a little," and then see to it with religious scrupulosity that it is no more. By appealing to their pride we can usually induce them to bear slight pain, but severe pain is out of the question.

A comparatively recent volume, entitled "Diseases of Children's Teeth, Their Prevention and Treatment," by an English author, Richard Denison Pedley, has been published in England and America. It is addressed to practitioners of dentistry and medicine, but more especially the latter. It offers many valuable suggestions. He recommends the application of nitrate of silver "in simple caries and where there is no great depth of decay." First wipes the tooth dry, winds a little cotton on the end of a stick, slightly moistens it with water, rubs it on the caustic and then on the decayed surface. It allays sensitiveness and arrests decay, but has one disadvantage, viz., that of blackening the teeth. In the anterior teeth he would use liniment of iodine, which allays sensitiveness, but does not arrest decay.

To relieve pain from inflamed pulp he uses "carbolyzed rosin," which consists of rosin one ounce, carbolic acid one ounce and chloroform half an ounce. He devitalizes pulps of deciduous teeth by repeated applications of this preparation. Condemns use of arsenic in deciduous teeth. Removes contents of pulp-chamber, but makes no effort to remove the pulp from the roots. Puts pledget of cotton dipped in iodoform or oil of cassia in pulp-chamber, places a disk of card, cork or tin over it and fills with gutta-percha or amalgam. So far our author's doctrine appears wholesome and worthy of acceptance. But in the next paragraph he says that if the pulp is dead and the tooth discolored, to fill such a tooth would be dangerous. Says if it

is firm in its socket and free from soreness, it should be cut down level with the gum and allowed to remain; but if it be loose and sore to bite on, it should be extracted at once. We would prefer to treat and fill such a tooth much the same as if it were in the mouth of an adult. All the above relates to the deciduous teeth, but the author recommends substantially the same procedure with a permanent molar, with a gangrenous pulp. This does not harmonize with the good sense which elsewhere characterizes this author's work, but sounds more like a voice from the dead, forgotten past—when the turnkey and carved ivory teeth held sway.

With what shall we fill children's teeth? My own practice has been to use principally amalgam and cement. Success, however, depends not so much on our choice of material as on our being able to prepare the cavities and exclude moisture while the filling is being inserted.

Western Journal.

FILLING PROXIMAL SURFACES OF BICUSPIDS AND MOLARS.

A Discussion.

Dr. C. F. Bliven, Worcester: The successful treatment of proximal surfaces depends on the patience, endurance, experience, skilful manipulative ability, and judgment of the operator. Cause and effect must be considered along many lines to reach a successful issue; the health of the patient first of all.

In treating these surfaces we must also consider the type of teeth we are to operate on, the relation of each part to every other part and to the whole, decay, gum, dentin, enamel, etc. Having a clear comprehension of the situation, we are ready to treat the lesion; let us first consider permanency, not necessarily of the filling, but of the tooth. What will save it.

How the cavity should be prepared depends on the filling material decided on. Gold, soft or cohesive, amalgam, gutta-percha, or cement. Soft gold requires four strong walls, and cement, gutta-percha, and amalgam a square cavity. Natural contour must be restored, and with cohesive gold it may be done in such a manner that the tooth will not only hold the filling, but the filling hold the tooth.

Dentists often complain of the difficulty of inserting pin-head fillings, and expect as great durability for large ones without considering the malleability of gold. However, good or bad, it is a daily surprise to me not that fillings do not last longer,

but that they last as long as they do, especially when we consider the difficulty surrounding the insertion of fillings, and that at best they are only an artificial substitute for lost tissue. We are to-day seeking the perfection of parts, that the whole may be perfected. Assuming this to be accomplished, supposing perfect filling-material had been found and the art had been perfected in all its details, has the ideal dentist been evolved? I think not. When by precept and example we singly and collectively have attained to that ideal condition when we can teach patients to save their own teeth, we will no longer find it necessary to look to externals to elevate the profession. To-day we relieve; then we shall regenerate. Regeneration is salvation.

Every dentist should make himself familiar with every method of saving teeth. It is a tremendously important subject that these answers treat of, as the bicuspid and molars decay more frequently than any other teeth. Crowns are, or should be, the last resort. A filling will usually save a tooth longer than a crown will; only when a tooth could not be filled should it be crowned. A young lady had been under the care of a physician three years for nervous prostration. She was so timid and nervous that it took two sittings before we could get her into a condition to begin to operate. The molars and bicuspid exhibited soft white decay. We excavated as little as possible, saving the margins, and filled with cement. In a year she had recovered from her nervous prostration and gained twenty or twenty-five pounds.

A lady had lost so many teeth she had not a masticating surface in her mouth; she had about four front teeth with which she could eat. Her health had been so poor that she had been constantly in the hands of her physician for five years. The doctor urged her to have bridge-work inserted, and after some time she consented. We constructed a bridge of five teeth, which gave her twelve good masticating teeth. In a very short time the effect of the better mastication of her food was apparent, but the patient was annoyed by the fact that unless she was careful when she leaned forward the water would run from both sides of her mouth. She consulted the doctor about this, and he told her she was all right, but the salivary ducts were so much more active under the more favorable conditions that she would need to get acquainted with them again. In a short time they were under control and the trouble ceased. A beautiful young lady, whose mouth we had put in good condition, had excellent teeth, and we were much surprised about two years

afterward when she came with a peculiar waxy appearance on both sides of the buccal teeth, and numerous cavities. We learned on making inquiry that the lady was just recovering from an attack of fever, and that she was taking a preparation of iron. We told her it must be stopt at once or the teeth would be ruined. Her physician, however, told her that the preparation did not contain any acid. Her food, too, was very unsuitable; the family were all employed at different occupations, and did not take time to prepare the meals. All possible was done for her teeth and a wholesome diet was prescribed, and she was dismissed. A few years afterward she returned in an exceedingly bloated condition, and told me the fillings we had put in had come out, and she had to have the teeth extracted and was wearing a set of artificial teeth. We believed the food on which she lived had destroyed her teeth, and finally destroyed her, for a short time afterward she was dead.

We cite these cases to show the necessity of taking the general health into consideration. The permanency of the tooth is important as well as the permanency of the filling.

Dentists sometimes get the financial fever, and in their hurry to get money do not take time to do saving operations on the teeth, forgetting that these chickens come home to roost.

In our practice we use cohesive gold where it is possible; when decay is very deep and conditions are favorable, we would apply a matrix of tagger's tin or German silver and fill the cavity with gutta-percha, then taking a burnisher we wipe the gutta-percha away from the margin and put in a pin for retaining. At the cervical margin we begin putting in soft gold or semi-cohesive gold. We often fill a cavity with amalgam and fill out the contour with cohesive gold.

Dr. J. G. W. Werner thought that it would require a very skilful man to fill teeth as Dr. Bliven described with gutta-percha and soft gold. He thought the method was all wrong, and for an average operator to attempt it would bring contour work into disrepute. Contour work should be so built as to exist for all time, and should not be built on mud foundations. He thought it much better to use soft gold for the bulk of the work, and to finish with cohesive gold. In extremely fragil teeth he would partially fill with tin and gold. This is much better than to fill with amalgam, because the tooth will be kept white, while amalgam discolours it.

Dr. Geo. C. Ainsworth thought the better way to fill large cavities was with a matrix and soft gold, and by soft gold he

meant gold that could not be made cohesive. In his opinion a man who fills entirely with cohesive gold in large cavities does what will exhaust his strength, but will not save the teeth as well as would a combination of cohesive and soft gold. We have all seen the old soft gold fillings which preserved the teeth but looked badly, and have taken them out for that reason. He now used a soft-working gold that was the least bit cohesive. At the cervical wall he often used tin and gold, then with soft-working cylinders he would fill the cavity half full or more and begin with cohesive ribbon while he had room to make retaining cavities. In this way he thought he got the best result possible.

Cosmos.

ENVIRONMENT.

The environment of the world's great men was not harmonious; they had thorns, and trials, and aches, but in spite of them achieved. They did not covet their oppositions, but the stirrings of genius and the calls of duty were imperious, and they stepped heroically into the opened path of duty, and God walked with them and worked with them, and they lived as in Paradise.

The better things of our life come through the ordinary processes of growth by culture. The graces we covet come not full-orbed and radiant from without, they grow from within by culture. Growth is a laborious process. The leverage of all nature outdoes the leverage of all machinery a million fold. Frederick the Great said of Joseph II., Emperor of Austria: He always wanted to take the second step before he took the first.

So many unpractical people fail because they refuse to recognize the necessary conditions which fence them in. They are impatient to reach the goal without doing the necessary work.

Take, for illustration, Paul. He had a thorn in his flesh, and besought the Lord earnestly that it might be removed. God did not answer this prayer, and yet he did. There are no unanswered prayers that spring from yearning hearts. His thorn had a mission. Originally it was a messenger of Satan; he meant to buffet and hinder this great man from his work. But through his prayer Christ seized it and transformed it into a grand ministry for his highest good. By this means he sought more grace; and, spirit-endowed, he wrought marvels in revolutionizing his age and reconstructing it on the right basis. Originally, so runs the German fable, God created the birds without wings, and they

hopt about on the ground and over twigs in search of their food. In their pathways were obstacles, and these they had to brace hard against for their removal. The burdens clung to them, and while bearing them they grew to them and became wings, and with these they rose above the ground and flew. Difficulties plant themselves in our path, not as stumbling-stones, but as stepping-stones. Thwartings are not meant to check our progress, but to add strength and beauty to our lives. Botanists tell us that fruits on a tree are arrested growths. But the tree does not allow them to be failures; it turns its thwarted developments into something better than its first hopes. So it may be with thwarted hopes and frustrated plans in our human lives; they may become rich fruits in the character, and character is ever the end toward which God is leading and shaping. There is no difficulty that may not be made a ministry of good.

F. C. Hubbard, in Self-Culture.

In using aconit and iodin it is better to repeat the painting of the part by small quantities, than to saturate the gums to such an extent that the throat and alimentary tract are irritated, and the stomach disturbed. A young practitioner applied a large swab of cotton, dipt in the mixture, to one side of an affected tooth with very nearly serious results. The entire mucous membrane of the mouth, throat and tongue was discolored by the excessive quantity used. There were all the symptoms of aconit poisoning, and for several days the patient was under the care of a physician. In the use of poisons it is wiser to do too little than too much.

Dom. Journal.

Dr. W. E. Walker, Pass Christian, Miss., demonstrated at the Southern Association the use of his "facial clinometer" in obtaining the condylo-occlusal angle of the subject for whom a denture is to be constructed; Walker's physiological articulator being set at the same angle, to secure a perfect balancing articulation. The demonstration was made on Dr. L. A. Smith, of Port Gibson, Miss.

Dr. Walker's promised comparative demonstration in the articulation of casts of natural teeth with the Bonwill and the Walker articulators could not be given, as no Bonwill articulator could be obtained.

Cosmos.

PRACTICAL POINTS.

By Mrs. J. M. Walker, Bay St. Louis, Mississippi.

Root-Canal Sterilization.—Oxidize contents of canal by inserting a small crystal of permanganate of potash; cleanse thoroughly, following with aristol and oleum gaultheria. If pus is present, precede the aristol with zinc chlorid, 5 to 10 grains in 1 dram water, or formalin, 5 per cent solution.

Louis Jack, Ohio Dental Journal.

To Open Up Teeth in Pericementitis.—With small stone grind a pit at the point at which you wish to enter with drill. The latter will then run smoothly and penetrate more easily, avoiding the shock caused by the revolutions of the drill. Keep point of drill well lubricated with oil of turpentine or glycerin.

R. E. Sparks, Dominion Dental Journal.

Removal of Tinfoil Adhering to a Plate.—Immerse plate in solution of nitric acid (one-third to three-fourths water), permitting the plate to remain in the solution for ten or fifteen minutes.

Dental Office and Laboratory.

Cataphoresis Bleaching with Pyrozone.—25 per cent pyrozone, being an ethereal solution, is a very poor conductor of the electric current. Add to it an equal amount of warm water to which has been added a grain of sulfid of zinc. Evaporate the ether by gentle heat till you no longer get the fumes. It will then be an aqueous solution and ready for use.

I. E. Nyman, Dental Review.

Die and Counter-die of Mellotte's Metal.—Burnish tinfoil over the die and leave it in place when pouring the counter-die. When cold the dies will fall apart perfectly, the tinfoil preventing the surface of the die from fusing.

W. B. Fahnestock, Ohio Dental Journal.

Setting Bridges.—Apply dam if practicable, and coat the pier teeth or roots with nitrate of silver, either by direct application or by cataphoresis. Advantages: Sensitiveness is obviated; cement adheres more surely; if the cement washes out, or if the band does not cover the root entirely, the silver nitrate protects it thoroughly; the tooth is rendered aseptic.

Alex. Jamison, Dental Review.

Devitalizing Paste.—

R.—Arsenious acid.....grs. xv
 Acetate of morphine.....grs. v

Mix and add sufficient wood creosote to make thin paste, then enough powdered alum to make a stiff paste.

W. A. Mills, Dental News.

Warm Cocain Solutions.—If the solution of cocain is warmed before using, its anesthetic effect is more rapid, more intense, and more lasting.

Lancet Critic.

Bleaching Teeth—Cataphoresis.—So far we have all been bleaching with pyrozone, with "the cart before the horse." We have made use of the positive electrode in the tooth. Experiment has demonstrated that the negative electrode should be substituted. This is in accord with the law of electrical osmosis—the electrically disrupted free oxygen of the pyrozone, being electro-negative, will seek the positive pole.

F. W. Low, Dental Cosmos.

Pulp Capping.—Iodoform powder, made in a paste with creosote, and flowed gently over the exposure, and protected by cement applied over it, comes as near perfection as a pulp-capping as anything in my experience or observation.

D. D. Atkinson, Am. Weekly Dentist.

Cavity Lining.—When necessary to leave a portion of partially decayed dentin, to avoid exposing the pulp, I combine equal parts iodoform and zinc oxid and mix with the phosphoric acid. I have never, to my knowledge, had a pulp to die under a filling when the cavity was lined in this way.

H. B. Hinman, Ohio Den. Journal.

Restoration of Bicuspids—If the buccal face has broken away, the tooth being pulpless, select a cross-pin porcelain facing and grind to fit the buccal aspect of the tooth just under the edge of the gum. Fit the pins of the porcelain into a narrow scrap of platinum, leaving on for a screw to pass between. Cement the screw into the root, place the porcelain in position with the pins embracing the screw, and surround the whole with a matrix; pack amalgam into the matrix about the pins and into all the irregularities of the palatal wall. Remove matrix next day and finish up the amalgam.

E. L. Davenport, International D. Jour.

India Rubber Bands for Regulating, etc.—With pinchers of various numbers and a flat leaden block, you can punch out, from either thick or thin rubber-dam,—according to strength

required,—bands which will be found more satisfactory than those cut from rubber tubing.

A. T. Coucher, Jour. British Association.

Vulcanized Packing.—Heavy pasteboard makes an excellent vulcanizer packing, and when vulcanizers leak dusting on corn-starch will stop it.

Dominion Den. Jour.

Root Amputation.—When a pyorrheal condition has been complicated with abscess, the palatal roots of lower molars will often be found entirely denuded. I have yet to see one in which the removal of such a root has failed to permanently tighten these very loose teeth. It takes but a few revolutions of the bur to amputate close to the crown, filling the end of the stump with amalgam, subsequently polishing.

M. L. Rhein, Items of Interest.

Prosthetic Dentistry.—A good prosthetic dentist must be not only a mechanic, he must be an artist of the highest excellence, and also a thorough anatomist.

Dr. Lowry, Dental Review.

Acute Abscess.—Whether incipient or advanced, administer sulfid of calcium in $\frac{1}{4}$ -grain doses every three hours. Given early enough it prevents the formation of pus. If suppuration has commenced, it limits its extent and favors early and complete evacuation. To relieve the pain, prescribe at the same time

Tinct. opii..... ℥. xxx

Aqua cinnamoniad 3 viij

Teaspoonful every half hour through the day.

J. W. Van Doarn, Ohio Den. Jour.

Wood Alcohol for Annealing.—Wood alcohol may be used for annealing, but the gold should be placed on mica, and held over the flame to avoid the soot that would be deposited if the gold were passed through the flame.

B. H. Teague, Am. Den. Weekly.

Formalin for Burns.—Formalin is extremely effective in healing burns. Apply on a compress moistened with 10 per cent formalin. In scalds no trace is left, the skin not even red.

New York Med. Woch.

Pulp-Capping: Iodo-Formagen Cement.—About six months ago I received news from Berlin of the great success of a new preparation for the conservative treatment of inflamed pulps. I tried it, and was surprised at the excellent results obtained in the first case—a pulpitis *acuta totalis*. The patient

had suffered agony for three days. The exposed pulp was covered with the new cement, carefully avoiding pressure, and the filling completed with dentos. The pain was relieved, with no return, and four months subsequently the pulp was still alive. Seventeen other cases without a failure.

Otto Beckle, Items of Interest.

Root-Canal Sterilization.—First. Thoroughly remove all pulp debris by broaches, wrapt with fibers of cotton. Second. Disinfect with 95 per cent carbolic acid and dry the canal. Third. Flood the canal with absolute alcohol and evaporate with hot air until thorough dessication is obtained. The rubber-dam is indispensable.

Jno. S. Marshall, International Den. Jour.

Antiseptic Treatment of Putrid Root-Canals.—Open up and cleanse pulp chamber and root-canals of all putrid matter. Then introduce formaldehyd on shreds of cotton and evaporate with a heated silver wire. Repeat two or three times at same sitting; then introduce a temporary dressing of cotton shreds saturated with formaldehyd and essence of geranium; close airtight with wax or gutta-percha. Repeat after two or three days. When the odor is sweet and pure fill permanently.

Am. Den. Weekly.

Sticky Wax.—For fastening teeth securely to the base plate, preparatory to trying in the mouth, a wax made with seven parts of white wax and three parts of gum dammar, melted together, and one part of rosin added, will be found far superior to the ordinary yellow wax.

Jas. K. Burgess, Dental Cosmos.

For Temporary Dressings.—Soak a large piece of cotton in a chloro-percha solution. With gentle, steady heat evaporate the chloroform and cut up the hard mass into pieces of various sizes which, when wanted, can be softened by warming over spirit lamp and packed into cavity. If required extra soft, as for over arsenical dressings, heat and dip in chloroform. They will be found useful also as wedges.

A. T. Coucher, Journal British Association.

Cement for Cavities in Masticating Surface.—If a little porcelain dust (made by pounding old porcelain teeth very fine) is incorporated with the usual cement it will make a very dense filling with a hard flint-like surface, especially useful on masticating surfaces.

Dr. Dunn, Am. Den. Weekly.

ITEMS.

Dr. Tom Crenshaw suggests that a hot-air blast thrown on the paraffin will melt and distribute it over a cement filling with uniformity, and encourage its flow in close proximal surfaces.

A CHEAP CROWN.—Make a silver band to fit the tooth the same as if crowning the tooth, fit and adjust the band, and fill with amalgam, allow the patient to bite, then remove the surplus after it is hard, burnish and you have an excellent cheap crown.

W. C. Kerns in Atlantic Journal.

The disadvantages of ether as an anesthetic have been overcome by combining nitrous oxid with the ether fumes. After three or four inhalations of nitrous oxid, gradually substitute ether fumes. In two minutes the patient is unconscious, and there is no choking or distress.

London Lancet.

Of the 500 or 600 varieties of bacteria only about 40 are of a deleterious nature; and many of these, though injurious under some conditions, are ordinarily merely scavengers; and most, which would be decidedly detrimental, or positively poisonous, if appearing alone, are made neutral by the prey of one on another actually absorbing or exterminating each other.

In our dental colleges the didactic system is the only system for the present time, when we are teaching that which is changing from week to week; it is not yet crystallized into text-books. The teacher should be the most competent man, but too often the college must take the man it can get, not the best; they must take the men who are available. We are trying to raise the standard of admission, but just now we have to teach the A, B, C's; we cannot teach the higher branches; we cannot give a classical course, but we aim high and will eventually attain the goal. We will yet be an educated body, a scientific body, rising to still higher flights. The schools are bad enough, but we are doing the best we can. The stream can rise no higher than the fountain-head which is its source.

W. C. Barrett.

Dr. Bonwill, in his brief stay in England gave special clinics on the following: The many uses of gutta-percha in dental practice. (2) Clinic on Abbey's soft gold foil (old-fashioned). (3) His special methods of packing amalgam. (4) His special method of clasping teeth in small partial cases with a view of elevating bridge work. (5) Pointed fissure burs and their uses. (6) Exhibit of new hand-piece, toothbrush, etc.

Dr. Bollinger, director of the Anatomico-Pathological Institution in Munich, asserts that it is very rare to find a normal heart and normal kidneys in an adult resident of that city. The reason for the kidney disease is the tax put on these organs by the drinking of excessive amounts of beer, and the cardiac hypertrophy and degeneration are secondary lesions for the most part. The consumption of beer is everywhere increasing.

Popular Science News.

In preparing proximal cavities in the anterior teeth, I do not believe it is always necessary to cut the tooth substance below the gingival line to make a successful filling. I do believe that the margin of the cavity ought to be extended far enough away from the point of contact to insure a safe filling; but that does not always necessitate extending it below the gingival line. A great deal of excellent tooth substance would be sacrificed in always following that rule.

Geo. E. Hunt in Review.

Dentists as a class do too much credit business. They are not particular as to what individuals they permit to run accounts. The only way that a dentist should do if he must do a credit business at all, is to have an understanding with the patient at the outset when the account is to be paid, and more than all he should know as to the probability of the patient's fulfilling the terms of the agreement. We should insist on short credits and prompt settlements. Any one who objects to such rules without giving a good reason therefor, you had better not present them with your services. The prevailing custom among the dentists as a class of long credits and slow settlements has brought the dentists as a class into disrepute among the business men. We all have to suffer from it. I understand that the great commercial agencies give the dentists no rating whatever.

E. H. Allen, in Review.

In Buenos Ayres there is one physician to each thousand inhabitants. Medical students have increased to such an extent that it is proposed to close the medical schools for five years so that the profession shall not be crowded. In the United States there is one physician to about every five hundred inhabitants, and with enough medical students to double the number of physicians during the next eight years. There is, however, no movement on foot to close the medical colleges, but there are several movements on foot to start new ones. *Dental Weekly.*

RETAINING APPLIANCE.—A simple, easy and accurate method of making a stay appliance for holding two or three teeth that have been moved by regulation appliance, is to take an impression in modeling composition and run a model with Teague's impression material; then take very thin platinum, and, after annealing it, with a flat burnisher, adapt it well to the teeth. Next, trim up the platinum where you wish it to come, and while still on the model flow solder over the entire outer surface as thick as desired. After polishing you have a neat, close fitting appliance. *H. J. R., in Dental Weekly.*

Having the rubber-dam adjusted, the cavity dry, the canals sterilized and the root thoroughly dried, place salol crystals in the cavity, with a flat spatula or an amalgam carrier. Pass the hot root drier through the salol, which immediately melts and follows the instrument into the canal, and by capillary attraction beyond the instrument. Repeat once or twice till the canal is filled with the liquid salol. Introduce a warm tin or copper canal point, carried carefully to the apex. In a few moments it will be found solidly imbedded in a crystalline, antiseptic mass, filling the canal perfectly.

R. M. Sanger, International Dental Journal.

The cement is then mixed and the amalgam thoroughly incorporated, forming an entirely new combination which has no superior for filling those saucer-shaped cavities with frail margins often found in the mesial or distal surfaces of bicuspid and molars.

Having used this combination for more than twelve years, I feel warranted in recommending it for your practical consideration.

Much has been said about the use of aconit and iodin in the treatment of inflammation tending to an abscess. While they are as good as ever and fill their place well, I desire to recommend the comp. tincture of benzoin, used about the same way. Place a drop on the dry gum and cover with a pad of dry cotton, allowing it to remain from one to twelve hours. Or, in severe cases, saturate a capsicum plaster with the tincture and apply to the dry gum.

Ohio Journal.

A bright lad, from a good home, so-called, was observed by his teacher to be growing morose. Little things were missing from the schoolroom, but the thief could not be detected. Soon sums of money, from friends and others, were taken, and it was developed that this boy, who needed nothing which his indulgent parents did not supply, was pronounced an irresponsible kleptomaniac, rendered so, the physician said, by the use of cigarets. Another boy, only fourteen years old, was unfit to attend school on account of frequent epileptic fits, caused, his physician said, by the use of tobacco.

Good Health.

TREATMENT OF INSTRUMENT WOUNDS.—If during an operation you should accidentally wound yourself by the prick of a needle or retractor or the scratch of a knife, you should at once encourage bleeding, and then touch the spot with strong acetic acid. It burns rather smartly for a few moments, but the resulting scab will be soft and pliable and not easily torn off. Never cover such a wound with collodion before disinfecting it thoroughly, and do not neglect your precautions in any case, however far beyond reproach may be the moral character of your patient.

Pacific Record.

A curious story in relation to hereditary suicide comes to us from Paris, which we give on the authority of Professor Brouardel. A farmer killed himself by hanging, leaving seven sons and four daughters. Ten of these eleven children, after they had each brought up families, took their own lives, and their several offsprings also committed suicide by various means and at various ages. The remaining survivor of the original eleven children is now a man sixty-eight years, and is supposed to have passed the probable age of his family's suicidal tendencies—at any rate, it is only charitable to assume so.

Health.

EDITORIAL.

THE ONE THING ESSENTIAL.

Whatever other feature of life we prize or regret, let us remember—whether we succeed in business or fail, find life what we expected or a disappointment—that nothing is an utter failure if, in the strife, we keep our winsome, guileless, cheery element, of purity, goodness and freshness of heart. If we lose this we lose the great essential of life and happiness—our little heaven on earth is gone; and though in losing it we gain everything else we seek, we find it only in the outer desert of the soul's desolation, where nothing can compensate or satisfy. Financial success may be brilliant, surroundings gorgeous, honors flattering, and yet, if they dry up the sweet juices of our affections, if they corrupt the joyous stream of youthful passions, if they bind and blind and blunt the exquisite sensibilities of our spiritual nature—all success is failure.

If, by the begetting of a hard, sordid, hoarding nature, selfishness, penuriousness and hoarding take the place of benevolence, philanthropy, world-wide sympathy and kindly action, gushing out of a whole-hearted, bounding, loving nature, there comes, of our own making, barrenness within and desolation without. Delight in doing is turned into irksome duties, lighthearted privileges into dreary burdens, and a cozy home into a miser's junk-shop. There is no room, no desire, for a sweet, peaceful, loving resting-place. Life is too full of hard tasks to think of social delights; burdens are too heavy for life to be buoyant, and hoarding too exacting to enjoy home and leisure and pleasure.

What a fool that man is who thus exchanges the luxuries of a life of love—the elixir of life—for the phantoms of vanity!—the peace, the rest, the comfort, the real pleasure, the wealth, the genial flow of the soul's sweet harmony, for a mine of diamonds, to get which, the hot blasts of the desert must dry up the life-blood, and, for food, find only glittering stones where no water is!

But if we give to our family and friends, to our business and society, and even to our enemies, an overflowing gentleness, geniality and generosity, we shall have left for ourselves wealth though in poverty, happiness though in trouble, and success though in failure; for in poverty we shall have riches within, in distress pearls in tears, and in the most utter failure, discipline to bring success.

Blest is that man who can conquer his ills with light-heartedness, who can cure trouble with innocent pleasure, and shake off evils with abiding loveliness and active goodness.

I had business once with a miser. He had a half million in real estate in New Orleans, and as much more in various properties in Winona, Minn., where he and I then lived. I went into one of his three-story store buildings, up stairs, through a dark hall, to a small dingy back room, to find his "residence"—one room, with one window looking out on the debris of a back yard, shut in by the blank walls of other three-story brick buildings.

I knocked.

"Come in," said the miser.

And there he was, eating his crust, with a wistful dog waiting for the crumbs. Two chairs, one table and a bed, with an old rickety kitchen stove, and a few pieces of crockery and tinware—no carpet, no fixtures, no books—constituted his "home."

"Why, Colonel," said I, "I would not exchange my little home for all your millions."

"You would be a fool if you did, sir," was his reply.

"But tell me, is this your home, when you are worth a million, and have right in this city such fine residences?"

"It is all I have, sir."

"Well, well; what poverty! What desolation! What loneliness! Colonel, is it possible this is the voluntary choice of your life?"

"Yes," he replied, "I have been fool enough to exchange for the glimmer of this tallow dip and that craven dog all the glorious sunshine of a home and the affections of a wife and the love of children. I loved my Mary, the darling ideal of my younger

days, but I loved the almighty dollar more. So I said to myself: 'I will be rich before I am happy.' In the strife I sacrificed my Mary, smothered my love, buried all my finer instincts—for riches. The change from love to avarice was gradual—oh, so gradual, I could hardly realize it. But I accomplished it. Slowly I squeezed out of my life all the sweet juices of my nature. If I could—but it is too late now—if I could exchange all I have that people call wealth, and envy me for having, for the real wealth of home and love and children—such as I know you have,—I would say, 'Here, Doctor, take it all, and give me in exchange what you have in your little cottage.'

A short time after this he was found dead, with his hungry dog as his only mourner.

This is an extreme instance. And yet, many in their strife for place and power sacrifice their most valuable features of character and enjoyment—tenderness, gentleness and sympathy, love, benevolence and congeniality—for what they call success. Their home becomes only their boarding-house, their business slavery; their passions are perverted and corrupted, and they hunger and thirst for what never satisfies; they exchange the elixir of life for drafts of death.

Surrounded with everything that should make them happy—pleasures inviting them to bowers of rest, resources within reach to relieve them of care and give them comfort—yet they struggle on in a deep, hard rut, loaded with heavy burdens, fainting for rest, but goaded on by self-imposed necessities, till strength fails, spirits flag, ambition fades, and life is gone.

Look at this man as he sinks in his tracks, and tell me what he has profited, though he has gained the whole world, and lost the soul of his life—the one thing essential—happiness, goodness, and usefulness to the world.

. The *Popular Science News* says that "if, after eating pure food, fresh, outdoor air is breathed, the blood will show a large increase in red corpuscles, but by drinking stimulants, the red disks are decreased in serious proportions."

RECREATION.

Recreation is specially necessary to the dentist. This does not necessarily mean physical rest. Often a change of activity is better than inactivity. An avocation is as important as a vocation, and the character of our avocation will vary with our whims and disposition. It must be something to divert the mind and muscles from the rut of our usual activity. To do this it is sometimes well to leave the place, surroundings and associations of our ordinary work. Some of us are so constituted that we are sure to be burdened with it to our hurt, if we are with it; so that to be properly benefited we must clear out altogether, and hunt over the mountains, row and fish and swim in the water, and visit strange lands and scenes—anything to get out of ourselves. But more often, behaving ourselves at home is quite as well. These radical changes are costly, and are often dissipating, exhausting, and weening from the normal routine of life. Dividing our time reasonably between work and play, and mixing them up a little, so that duties become pleasures and work rest, and so that our spirits, vim and elasticity are retained, is often quite enough to bring back freshness and healthful vigor. Running out into the wide world to taste its sweets and smell its ozone is wise; but it is astonishing how much of both we can find, if we look for it, and especially if we run for it, right about our own premises. Ah, yes; this running and jumping and skipping—this getting up and getting there, is what exhilarates the blood, arouses the spirits, and gives us new life. A dentist should never pass a day without taking a dose of this medicine, though he has nothing to help him but shank's horses. It is better than the delusive stimulus of whisky, the enervating winsomeness of narcotics, or even the rest of the lounge.

What we want is something to do daily, outside of our common work, that shall stimulate and employ and please that part of ourselves which by our work is left dormant, and which shall allow occasional rest to that which is overworked.

DISCOURAGEMENTS.

Let us not be discouraged because we are not as quick-witted as some other fellow we may know. Let us be thoroughly settled in the conviction that steady hard, conscientious work will be sure to bring us final prominent, permanent, prosperous position in society. Though we may be little and unknown, loved and prized by none about us, while that other fellow is petted and flattered and helpt, yet let us in patience and continual effort possess our soul. Aptness and cuteness and ready wit may bring our favored neighbor speedily into notice; but great men are not made in a day. Glitter and show and brilliancy may attract for a time, but solidity and substantial qualities are alone permanent. Let us be willing to work for a time buried in obscurity, if by labor and disciplin and struggle we may built up a strong, symmetrical character, and thus fit ourselves for a noble position of usefulness, profit and honor. The light, trifling and superficial man pleases for a day, and is forgotten in a night. He can neither hold nor use great trusts. It is only for those who are developt by persevering struggle and severe disciplin that golden opportunities come. We see the taciturn, plodding, obscure Grant coming from his tannery to be the great general of our army, and the gaunt, homely, raw-boned Lincoln coming from splitting rails to be our honored President; but we do not see the long, dark vale of preparation and development between their obscurity and their prominence.

It seems like backsliding to take up tin again. Dr. Marshall comes out with an ingenious plea for its use. But really, with cement and alloy and gold where does the use of tin come in? I am not sure, if we are to use tin at all, it should be in connection with lead. Most of the cheaper so-called tin foils are tin and lead rolled together. This is much more plastic, cohesive and even waxy in its manipulation than tin alone. It works beautifully and lasts well. I have used it in my own practice,

and know of its use by others, with much satisfaction, and without any injurious effects from the lead.

My attention was first called to its possibility as a filling soon after the war, when a soldier came into my office to have some teeth filled. Among them was a molar with a large cavity he had filled himself with a bullet. He had shaped it as well as he could, and then gradually pressed it in by the force of his jaw till it pretty well conformed to the shape of the cavity, and had done good service for more than a year.

"The survival of the fittest" is just as prevalent among dentists as plants. There is not much left for chance. Like the little sprout which finds a pebble in its way, there may be some trouble in getting up, but clogs and stones will be finally pushed aside. If the living thing is worthy of life, it will assert itself and find its place. Of course, if we would have a fine growth of either dentists or plants, there must be some good agriculture done. The difference between weeds and plants is their usefulness; and the difference between the growth of either is their environment and culture. Put even a vigorous plant in the dingy, uncared for office of some dentists, and it would become a stunted weed, just as the dentist becomes with the same surroundings and neglect.

We could but smile at the foolish vanity of a dentist the other day, who evidently thought glittering appearances would attract the best patients. He was bedecked with diamonds—or French glass—on fingers and breast, as extravagantly as a first-class street walker, or a dude, and had the same insinuating, silly smile, coquetry and feminine softness. His office was of the same character. Gaudy display was everywhere. This was very foolish, and so much overstepped propriety that it was an offense.

We know a dentist who goes to the other extreme. He is not even cleanly. His clothes are as coarse and unkept as a plowman's, and his manners as uncouth. Of course his office is

slovenly, bare and uninviting, his instruments dirty, rusty and ancient, and his chair only fit for a third-class barber-shop. Could such a dentist prosper?

It is difficult to do thorough work for children. And yet if we go cautiously and kindly to our work, especially at the first sitting, and do only some *little* thing; gradually accustoming our tender patient with what is necessary, we get his confidence and his good opinion. Then, too, it is not necessary to be so thorough as for the permanent teeth. Cement, or cement covered with amalgam is quite enough. Even if the pulp is exposed, it may be more easily and painlessly killed and removed than with adults, and the filling of the pulpless tooth is seldom followed by abscess. Abscessed teeth should generally be removed. But this may be without pain by one of our local anæsthetic.

It is a dreadful thing to be contented—to be satisfied with ourselves, with our surroundings and with our attainments. When ambition for improvements has vanished our sun has set—the more pitiable because unregretted and unrecognized. We sit in our corner dozing and dreaming while what should interest and improve us passes unnoticed. The great world rushes by while we are left behind, without even a feeling of loneliness. Wild brambles are converted into berry bushes, bitter nuts into delicate fruit and the wilderness blossoms into roses and grain, but we are contented with toys and trifles. The very atmosphere is surcharged with new lights, marvelous powers and charming felicities, and we are incapable of entering into their joys. Even its music, and eloquence, and enthusiasm are wrangling voices.

Over a large area in Central Russia the magnetic needle does not point north and south. It is one part deflected to the west, and at another part to the east, and at one place it points due east and west.

Our failures are generally our own fault, few by the fault of others, or even by our environment. Let us, therefore, look within us for our hinderances, and cultivate those qualities which insure success. As for competitors, we can brush them aside, or use them, or by extra devotion to our business outstrip them. The main thing is to fill well our place, for then our place will create for us the ideal of our conception.

But like the beautiful mansion, we must first be content with ruf work at the foundation, and we must have patience to see the whole structure rise, inch by inch, every detail perfected and every part well adapted to the whole.

Many recently exposed pulps may be saved by touching them with a flake of tannin. It mummifies the surface and often prevents further pain, tenderness or other trouble, though, of course, this surface should be protected, and the cavity finally filled nearly to the surface with cement and finished with metal. When not really exposed, but aching from a softening of the dental covering, instead of removing these layers of dentin besmear them with a very little thin paste of tannin, carbolic acid and oil cloves. This will make a leather of these soft layers, and by placing over the application a disc of paper the cavity can be partially filled with cement and completed with metal.

It is estimated that if all the salt in the ocean was crystallized there would be seven million cubic miles of solid salt. Yet, if all this could be taken out in a single day, it would not cause the water to fall a single inch. This seems incredulous; but as partial proof, fill a quart measure full of water; now put in enough salt to make it as salty as the ocean, and see how little increase of bulk there would be. It would be hardly perceptible. Though water looks to us as a solid mass of liquid, it is really composed of minute particles of water, with air space between each. With the salt added these particles of water would more nearly coalesce, that is all. Other substances, as sugar, might be added without causing the measure to run over; and still another.

KERNELS.

The powder used for cement makes an excellent polish to put the finishing touch on vulcanit plates. Some use plaster of paris.

In making an ingot of gold, platina, silver and tin, though the combined weight will be nearly maintained, the bulk will be considerably less.

Evidence is found in the tombs of the first centuries of the Christian era that it was the fashion among the more civilized wealthy classes to adorn their front teeth with pearls, diamonds, etc. Small discs of jadeit, cut to a perfect fit of a tooth cavity, and secured by bright red cement, were specially prized.

Dr. C. C. Corbett, in the late Illinois Society, used oxiphosphate cement to anchor the gold, thus preventing the extravagant cutting of tooth substance—starting one-third of cavity first, and finishing with a large pellet of gold. It was claimed that the cement will also prevent future discoloration along the margin of the filling.

How many nerves are there? What a difficult question; for what we generally call a nerve is a bundle of many, which, passing on, divide and subdivide almost *ad infinitum*, and yet all this is but the unraveling of the bundle. It is now believed there are not less than 10,000,000 distinct perfect nerves, each with independent function.

There are now so many "dental drugs" that we are confused in selecting what are best. If we could take the various manufacturers' word for it, they would all be the best. And yet with wise discrimination founded, on a concensus of opinion and on our personal intelligent practice, we shall soon have the survival of the fittest. One thing is sure, there never was a time when there were so many really good drugs, and the wisest will make a wise use of them.

Sixty-eight millions of stars are marked by the photograph of the heavens being prepared by European astronomers.

It is stated to be easy now to make large gems by fusing a lot of small ones together in the electric furnace. If this is true, gems will lose much of their value. Diamonds, we believe, cannot be melted.

For a cheap ornament for the office or parlor fill a tumbler with water more than saturated with salt. The salt will crawl over and cover the glass with a thick coating of beautiful crystals. The water must be renewed as it evaporates, and the salt too, if enough was not used in the first place. Also the cup or tumbler should be placed in a dish.

Some city dentists speak slightly of country dentists. There are perhaps as many good dentists in the country as in the city; and certainly as many poor dentists in the city as in the country. There is also as good proportion of country practitioners who are in easy circumstances, owning their homes and laying up money, as in the city. They may have less profits but they also have less expenses.

There are now so many dental drugs it is confusing to select the best. If we could take the manufacturer's claim they would all be the best. Yet we cannot afford to ignore all nor take all. Let us observe well the experience of others, and watch closely their effects on our own patients and thus select with intelligence. There was never a time when so many really good drugs were offered the profession.

Clear, legible writing is a great accomplishment. Even if you cannot be a "fine" writer, you may write plainly. Some of our "fine" writers are ineligible; even their names can be hardly deciphered. It is a shame to send such unreadable manuscript to a printer, or even such a letter to a friend. If really you cannot learn to write, get some one to write for you, or employ a typewriter. But it is generally carelessness, or an attempt to flourish or unwarrantable rapidity. Better write slower and write better. As surely as we receive a manuscript in a hasty ineligible chirography we are sure it will need much "trimming," for the thoughts will be immature and indifferently expressed.

Alloy can be manipulated too much. Mixing simply to a homogeneous mass is better than a still further working to make the mercury dissolve every particle, for by so doing the tin, mixing more readily with the mercury than the precious metals, floods the finished surface; and as this hardens you have a poorer amalgam than in the body of the filling. If in finishing you do find an excess of mercury, it is better to take it up by adding a few flakes of dry alloy than to absorb it by tissue paper or otherwise.

Few dentists retain good health with their office in their dwelling. We are all too lazy to take long walks, or to saw wood, or to dig in the garden, if it is not forced on us. Any amount of gymnastics will not take the place of plenty of fresh out-door exercise and downright hard work. Better by far be obliged to go quite a distance to and from your office, and to walk at that, with head up, shoulders back, and the whole carriage swaying to the march of vigorous health and dignity. Of course the wheel is good, and so is the horse. But above all men the dentist should have his daily tramp and some kind of out-door, vigorous work.

Many underestimate "the little things" of every-day practice, especially in the doing of difficult work. To the doer they are so common they are hardly taken account of; yet their character, and the cuteness or clumsiness with which they are done make up the sum of our success or failure.

Yes, the success of the most difficult work is made up of little details well done—and often of little things so easily done by constant repetition that the aggregate is hardly known as difficult work made easy by accurate details.

We little know what there is in us worth bringing out till necessity comes on us to force thought and activity. It is for this reason that the poor and necessitous are often found in the front, and the well-to-do young men and women are left in the rear. Money and rich friends and "influence" will not take the place of struggle and aggression and bold perseverance.

"I must fight if I would reign." And this is as true in physical and temporal things as in spiritual and eternal things.

It is more difficult to see our own faults than the faults of others, but we should be more anxious to cure our own. When, therefore, a fault is pointed out to us, we should immediately scrutinize it with great care and overcome it, however unwisely it may have been brought to our notice.

English capitalists are fast getting control of many of our trollies and railroads. The same English enterprise controls much of our commerce by water. England owns five-eighths of all the steamers of the world.

A jury in the Supreme Court in Brooklyn, N. Y., has given a woman in that city a verdict of \$5,000 in her suit against a druggist for the loss of her husband, who was killed by a dose of oxalic acid put up by mistake in the druggist's store for Epsom salts.

According to *The Electrical Age*, the total length of the world's telegraph system has now reached 4,908,823 miles, exclusive of 181,440 miles of submarine cables. This mileage is apportioned as follows: Europe, 1,764,790 miles; Asia, 310,685 miles; Africa, 99,419 miles; Australia, 217,479 miles; America, 2,516,548 miles.

VICTOR HUGO NOT A SMOKER.—Victor Hugo was not a smoker, asserts the *Literary Digest*. As Théodore de Bauville once said, "In the house of Victor Hugo, peer of France, no one has ever even attempted to smoke." One evening one of his guests was vaunting the beneficent effects of a cigaret on a creative imagination. The great poet at once arose in revolt. "Believe me," said he, "tobacco is more hurtful to you than beneficial; it changes thought into reverie."

One of our most prominent business men of Philadelphia died recently. His physician says of the cause of his death: "Mr. Singerly was an inveterate smoker, and for years had suffered from what is called a 'tobacco heart.' I forewarned his family that some day he would die suddenly in just the way he has. He knew that his heart was weak, but always laughed at the thought of danger. The end has come, however, in just the manner I had predicted and expected."

FOR OUR PATIENTS.

NEVER SATISFIED.

The earth, were it mine, and every star,
Their maker, ruler of their times,
And I at heights above all else so far,
And the conductor of the Heavenly chimes.

I could not feel content with all,
For he who's reached the topmost rung
Is ever conscious he may fall,
It matters not how high he's swung.

And yet, I am content to labor on ;
Live o'er each day that's gone before ;
Do all that duty calls be done,
And still try to do the more.

No one can know what is unrest,
Unless he be with inspiration born ;
It is not enough to be upon the crest,
Nor have your head with crowns adorn'.

There is beyond a vacant spot to fill ;
The praise of man impels not to the mark ;
A spirit's there no one can still,
Resist, and 'twill forever round you lurk.

You cannot from its haunted presence flee.
It calls you to new work and you must strive,
Assured when it is done that you will see
You're only a lone worker in that hive.

And in the task arranged, it was for you alone ;
Then wait not ever for the praise of man,
For a lost moment no one can atone,
Do for your fellow the best you can.

A CURIOUS DIALOGUE.—“I beg your pardon, doctor,” she said, nudging up to me and speaking in a sort of stage whisper; “but do you think I ought to go on being a vegetarian?” “Why not, my good woman?” I asked, jokingly. “If it agrees with you I see no objection. You don't think your broken arm was caused by want of meat, do you?” “No, doctor; it isn't that, but,” and she whispered still more mysteriously in my ear, “they tell me I've got ‘haricot veins’ in my legs, and I wondered if it had anything to do with my eating beans.”

Globe.

THE EVILS OF OVER-EATING.

We hear a great many fond fathers and mothers say, "Our boy, or girl, is overworking," and yet the work may not be taxing to a normal constitution, but the fact is they have grown languid, perhaps restless, and somewhat sallow and peevish, and the first thought is that they must be overworking. There is strong probability that it is not overwork that is making the change so much as over-eating. The quantity of food taken often plays a more decided rôle in the activity of the body than the quality of food taken. The majority of people are not particular enough about the quality and combination of food, but the graver error is in over-eating.

There is a great deal more in softening of the liver than in softening of the brain, and when the liver becomes overcharged, then the system is filled with the products of poor digestion, and then comes the train of diseases akin to rheumatism.

When the individual over-eats, there is all the more necessity of heavy work to work up in a legitimate way the food elements that are taken into the system.

Over-eating, coupled with too little exercise of the muscles, produces a combination that will surely result in an impoverished system, a weakening of the brain, and senile decay. People are everywhere dying of physical excesses, of useless expenditure of vital force. It would not be too large an estimate to say that five-sixths of the constitutional vigor of every man and woman is wasted on luxurious living and idleness; and, as a result, the last twenty or thirty years of their life are eked out miserably, sometimes in pain and discomfort.

A proper amount of food spent in legitimate exercise of the body will perpetuate vigor and freshness, and lead to a rich old age.

Family Doctor.

SPONGES.

Some interesting facts about sponges are given in a recent report on the sponge and oyster industries of Southern Italy. Science has declared that a sponge is an animal, and biologists have observed that though a living sponge is fixed and apparently motionless, the holes in the surface are capable of opening and shutting, and from the largest of them, when open, a stream of water issues which is supplied by innumerable smaller holes, generally invisible except under the microscope. Young sponges

swim freely about by means of little waving hairs on their surface, till they reach an age when they prefer security to independence and monotony to danger. They live on solid food; the water entering by the small pores passes through a system of branching and fine canals, and is collected again by a similar system into the outflowing current from the large holes. At the junction between the two systems of tubes are the most vital organs of the sponge, little swollen cavities of microscopic size walled in with tiny living particles, each bearing a vibrating hair with which it lashes on the current, and a transparent filmy skirt with which it catches any food that may pass. All this labyrinth of canals and cavities is living, soft flesh, set through and through with little flinty needles or thorns to prevent it falling a prey to the hungry creatures that exist in the water. The sponge of commerce during life shows only the largest of its numerous holes; over all the rest the dark slate-colored flesh forms a continuous film. In the ordinary course of sponge-fishing, the fisherman, having once secured his sponge, proceeds to prepare it for the market. The animal rapidly decomposes if exposed to the air, and therefore the body has to be rapidly beaten or washed in running water till the fleshy substances are thoroughly removed. If decomposition has advanced too far, no process is known by which the skeleton can be purified and rendered fit for use. The sponges, when cleaned, must be thoroughly dry before they are packed, otherwise they will develop orange-colored spots which the Greek fishermen call "sponge cholera."

Pharmaceutical Journal.

THE SIN OF WORRYING.—It is care that kills. One who deliberately cultivates a disposition to throw care to the winds soon becomes an indispensable person to his friends. Care is worry, pure and simple. The burden that causes us to worry is heavy enough to bear, in all probability, without adding to it that of all-engrossing care, which never lets the mind rest for an instant. Suppose you do "have troubles of your own." Can you cure them by worrying? One's best effort to overcome the trials and tribulations of this life is all that is demanded. If that effort surmounts the difficulties, well and good. If it fails, the fret that wears wrinkles in one's soul, the worry that makes us hated by our friends, the care that wears deep furrows on the brow do not help one out of the slough of despond, but rather bury us the deeper. The world gets very tired of men and wo-

men who placard their woes on their faces and moan it in their voices in hourly conversation. But the world dearly loves those people who are merry and companionable, even when grief is gnawing deep. We owe something to society, to the world of people about us, and have no right to make ourselves public nuisances because the clouds obscure our sun.

Washington Star.

Musk is obtained from an abdominal sack in the male deer of the small hornless variety inhabiting the higher mountains of Central Asia. It is found over a large region and as far north as Asiatic Russia. It is a brownish, granulated mass, from the size of a walnut to a hen's egg. Its scent is so strong, persistent and enduring that a very small quantity will give great prominence to its odor. In ancient times its odor was more highly valued than now. The aristocracy had a minute quantity mixed in their house plaster. Though thousands of years have rolled by, the scent of musk in those walls is still prominent. Yet it must be remembered that scent or odor is the giving off of actual particles of the substance.

PRESSING STONE.—A despatch from Montreal says that some remarkable experiments are being made at McGill University which tend to show that a substance so hard and brittle as marble may, under certain conditions, be molded like clay. The experiments consist in placing miniature columns of pure Carrara marble or granit in sheaths of iron, and submitting them to graduated but long-continued pressure, with the result that the marble shortens and thickens and bulges so as to swell the iron sheath. The iron then being cut away, the marble, no longer cylindrical, but greatly altered in shape, remains solid and brittle as before. No increase of temperature or other agency than the pressure is applied in producing the above change. The experiments so far conducted have been highly successful.

THE HEDGE DOCTOR.—A "hedge doctor," a kind of quack in Ireland, was being examined at an inquest on his treatment of a patient who had died. "I gave him ipecacuanha," he said. "You might just as well have given him the aurora borealis," said the coroner.

"Indade, yer honor, and that's just what I should have given him next if he hadn't died." *St. Thomas' Hospital Gazette.*

BRIEFS.

A man weighing 150 pounds is carrying about 100 pounds of water.

It is not generally known that when a person falls into the water a common felt hat can be made use of as a life preserver. Placed on the water, rim down, it will bear a man up, it is said, for hours.

The largest and most famous ruby in the world forms part of the Imperial State Crown made for Queen Victoria in 1838. It is believed that this ruby was worn in the helmet of Henry V. at Agincourt.

According to Professor Ravenstein, a member of the Royal Geographical Society, our globe consists of 28,000,000 square miles of fertile lands, 14,000,000 of what may be generally described as steps, and 1,000,000 square miles of deserts.

An ingenious curtain pole has been devised. It is hollow, with a slot running lengthwise on the under side. From this slot depend the rings, mounted on balls, which roll inside the pole when it is desired to open or close the curtains.

In the deserts of Arizona there is a species of woodpecker which pecks the telegraph poles to pieces. The bird hears the humming sound, and imagines that insects are beneath the surface.

IMPRISONED AT HIS OWN REQUEST.—Last July a young man in New Jersey induced the police to lock him in jail, so he could not get cigarets. He had begun smoking at the early age of ten years, and at twenty-six was a nervous wreck, with a will-power so weakened that he was utterly unable to resist the clamorings of his appetite for cigarets when it was possible to get them. Within the last three years their terrible effect has been painfully apparent—his constitution is now ruined, his once robust body is reduced to a skeleton, he is so nervous he can scarcely hold a glass of water, and his head aches incessantly. Again and again he had determined to drop the habit, but found to his dismay that he could not do it, as he no longer had the will-power to obey the dictates of his conscience.

Good Health.

A small boy, the Rev. Dr. Lambuth relates, teased his father for a watch till he was forbidden to mention it again. At family prayers next morning, when asked for his Scripture verse, the youngster repeated, "What I say unto you I say unto all—watch."

The following shows a singular way of curing the toothache, in vogue among the peasantry of Ireland: A funeral was taking place about a mile from a town. Several old skulls were thrown to the surface in digging the grave, and as they lay on the ground a respectable young girl took up one and tried to pull a tooth from it with her own teeth. Failing in this, she tried another skull, and succeeded in forcibly extracting one. She explained to a bystander that it was to cure toothache, and that the pain would now leave her teeth and go to the remaining teeth in the skull. In the event, her toothache got much worse, and no wonder, and her mother, to make things right, traveled off to the graveyard with the tooth, and once more committed it to the earth. I find this strange superstition still exists here even among the better class of the peasants.

Dental Record.

The origin and course of the present epidemic of yellow fever proves the utter untrustworthiness and inadequacy of local quarantine. Nearly all previous epidemics have taught the same lesson. A uniform law, with adequate authority to sustain its impartial and fearless enforcement, is the only defense against these perennial invasions. Some department of the national government is the proper agent to enforce such a law. Uniformity and authority can be secured in no other way. The first duty of this branch of the government, however instituted, should be the establishment of a national quarantine worthy the name.

Medical News.

Sir Isaac Holden, the inventor of the lucifer match, died recently in England at the age of ninety-one. Though he did not profit by that invention, others, especially in woolen machinery, gave him a large fortune. He set out comparatively early in life to live as long as possible. In the matter of exercise his rule was to spend at least two hours a day in the open air, and it is told of him that on first going to work in his youth, he agreed with his employer that instead of having a yearly vacation, he should have an hour every afternoon in which to take a walk.

NOTICES.

The following from the By-Laws of the National Dental Association is important:

"Article III, Section 3. All delegate members shall be practitioners of dentistry. They shall be received only from permanently organized State dental societies. They shall be elected by ballot at some regular meeting of their society, and shall be members who have done meritorious work for the profession; but no person shall be received as a delegate who is in arrears for dues to this Association."

Also, "Article IV, Section 50. Each State society may send one for every ten of its active members as delegates to this Association for one year, upon complying with the requirements of its Constitution; but no society shall be entitled to representation that does not adopt or substantially recognize the Code of Ethics of this Association."

The fact that the American Dental Association received delegates from both local and State societies renders it necessary to call attention to the fact that delegates to the National Dental Association will be accepted only from the State societies, and that such delegates must be elected by ballot at a regular meeting of the society.

Emma Eames Chase,

Cor. Sec'y, National Dental Association.

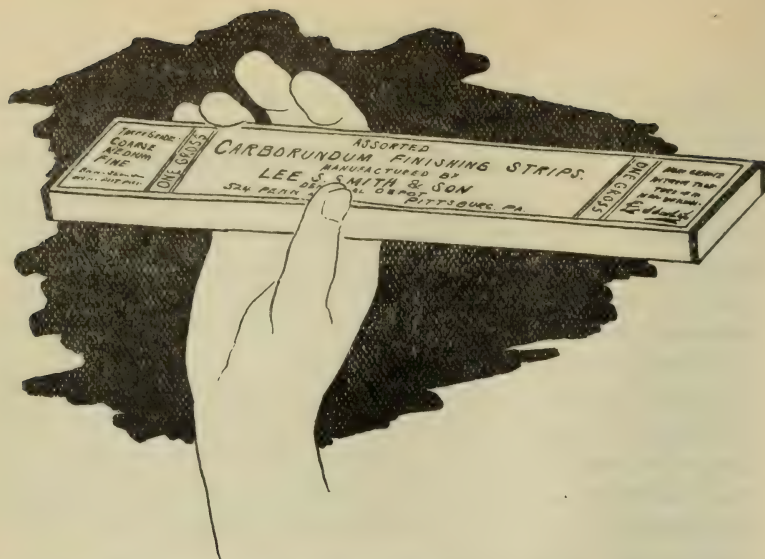
The thirty-fourth annual meeting of the Missouri State Dental Association will convene at Merrimac Highlands (near St. Louis) July 5th, and continue four days.

All dentists practicing in the State, who are not members (and wish to become members) of the Association, and dentists of other States, are cordially invited to attend.

When purchasing your railroad ticket remember to get your certificate from ticket agent, so you can get the rebate on your return ticket.

A large attendance is anticipated, and we are assured of a royal meeting. *H. H. Sullivan, Cor. Sec'y, Kansas City, Mo.*

The officers of the Chicago Dental Society for 1898-99, elected at the annual meeting, held in the Stewart Building, Tuesday evening, April 5th, 1898, are as follows: President, J. E. Hinkins; First Vice-President, D. C. Bacon; Second Vice-President, E. A. Royce; Recording Secretary, Elgin Ma Whinney; Corresponding Secretary, C. S. Bigelow; Treasurer, E. D. Swain; Member Board of Directors, J. G. Reid; Board of Censors, A. W. Harlan, W. V.-B. Ames, C. N. Johnson.



Criticism has taught us some things about making strips. It has taught us how to make them better. It has taught us how to make the very best strip that has ever been used in a dental office.

We expect to be held strictly accountable for that statement. We will not qualify that statement in any way. We have put the **CARBORUNDUM CRYSTALS** on the linen so that they are almost part of it. They can't be scraped, or scratched, or hammered off. The linen is just as thin as any linen strip that is made. We believe it is just a little bit stronger.

This is a new strip. It has been on the market since the 15th of May.

We will send samples to any man who asks us for them. If he takes our word and orders a box of the strips, and finds we exaggerate in the slightest degree, we will pay him 50 cents for the strips that are left in the box.

NEW CARBORUNDUM STRIPS, per gross 50 cents. Three grits, coarse, medium, fine. Boxed separately or in assorted package. Assorted widths or any width you want.

LEE S. SMITH & SON,
MAKERS,
PITTSBURG, PA.

DENTAL BRIEF.

VOL. II.

JULY, 1898.

No. 12.

ORIGINAL COMMUNICATIONS.

PICKED UP AT ST. AUGUSTINE.

First annual meeting of the Southern Branch of the National Dental Association, February 22d-25th, 1898.

CAUSES OF FAILURES IN OPERATIVE DENTISTRY.

1. Dull burs, excavators and chisels.
2. Imperfectly-prepared margins.
3. Fillings in too close proximity to the pulp.
4. Wrong choice of material, either to gratify the whim of patient, or in using plastics from a desire to complete the work in less time, when gold would have been best; or in the use of gold for the sake of a larger fee, when cement or amalgam would have been better for the tooth.

5. Failure to thoroughly remove all salivary calculus.

Rule first. Examine the mouth.

Second. Clean the teeth.

Third. Other necessary treatment.

Fourth. Fillings.

MORAL.—Impress on patients the lesson of cleanliness in the mouth as well as of the body, then we will have fewer failures in operative dentistry.

From paper by Dr. L. F. Fruik, Lake City, Fla.

RULES FOR TESTING BURS.

If the edge of a bur blade can be seen when held up against a clear light, lay it aside. Send to be re-sharpened when accumulated in sufficient quantity.

W. E. Walker, Pass Christian, Miss.

Try it in the mouth.

Dr. E. G. Quattlebaum, Columbia, S. C.

Try it on the edge of the thumb nail.

Dr. L. M. Cowardin, Richmond, Va.

When it refuses to cut, throw it away, and it will not trouble you again.

Dr. S. B. Cook, Chattanooga, Tenn.

LEAVING "DISCOLORED," "SEMI-DEVITALIZED," "SOFTENED" OR
 "CARIOUS" DENTIN IN THE BOTTOM OF A CAVITY
 OVER A NEARLY EXPOSED PULP.

I would rather leave some discolored dentin immediately over the pulp than excavate too closely.

Dr. L. F. Friuk, Lake City, Fla.

When thorough removal of carious dentin would expose the pulp, I leave a layer, covering it with a thin slice of gutta-percha dipped in chloroform sufficiently to dissolve the surface and make it adhesive.

Dr. Chas. Sill, New York.

I remove everything except sound dentin, regardless of pulp exposure. If the pulp is that near exposure I destroy it, remove it, and fill the canals. If I left decayed dentin in proximity to the pulp I should expect trouble to follow.

Dr. L. M. Cowardin, Richmond, Va.

I never expose a pulp if I can avoid it. By leaving a layer of semi-devitalized dentin I sterilize with pure carbolic acid, 95 per cent, then varnish the cavity, put in a little thin cement, with gutta-percha over that.

Dr. E. G. Quattlebaum, Columbia, S. C.

If I nearly expose a pulp in excavating and there has been no periodontal inflammation, I leave a little softened dentin over the pulp and sterilize it. I do not want to kill a pulp that is in a healthy condition. I treat the softened dentin with pure beechwood creosote for a day or two, and then put hydronaphthol cement in the bottom of the cavity—one part hydronaphthol powder to two parts of cement powder, mixed as any ordinary cement.

Dr. L. G. Noll, Nashville, Tenn.

Carbolic acid will not sterilize carious dentin. It simply anethetizes the nerve in the pulp. Creosote is even more escharotic than carbolic acid. I can kill any pulp with three applications of creosote.

Dr. Frank Holland, Atlanta, Ga.

THE DENTAL PROFESSION—ITS PRESENT HONORABLE POSITION.—From being despised by the narrow and intolerant skepticism that dominated even the best in other branches of knowledge and research, she has fairly gained the intelligent appreciation of the best and wisest in the world. From being denied association with the arrogant pretenders to all respectability she has aspired and attained to equal merit and equal honor with all professions.

Medicin, who formerly held aside her skirts—if she did not

also hold her nose in the presence of this ambitious youngster—has graciously deigned to allow the claim of blood-relationship to be announced unchallenged.

Law, that musty aristocrat, who superciliously looked askant at everybody who does not wear a gown and wig, has so far unbended that he calls on expert exponents of this new profession to throw light on obscurities.

General science, unsociable, self-centered crank that she is, has also gravely acknowledged that this young claimant has just right to a seat among the mighty. * * * Dentistry has gained by merit alone the respect and honor of an acknowledged equality with all who love the truth and seek it.

Dr. D. R. Stubblefield, from paper read at St. Augustine.

A REMEDY FOR THAT FOUL BLOT—DENTAL GRADUATE ATTACHES OF THE “DENTAL PARLORS.”—Let a requirement be made on each graduate of all reputable schools and colleges teaching dental science to sign, before receiving a diploma, a written or printed pledge, to be attested by the Dean or President, and filed in the archives of the school, to faithfully observe and honor the “code of ethics” adopted by the National Dental Association and by all reputable schools, and in default thereof to surrender his diploma to the school from which it was received, and have his degree revoked by publication in the annual announcements of his “Alma Mater” and the secular newspapers of his place of residence. * * * I submit this suggestion in the hope that something may be evolved and put in operation to check the floodtide of abasement and prostitution that is now disgracing and dishonoring the dental profession, and bringing unmerited reproach on our educational institutions, for it is the graduates and degree-men who are giving some show of respectability and attractiveness to the “dental parlors” and professional “junk-shops.” The illiterate and untidy “cheap John”—of and by himself—would cut but a sorry figure, but reinforced by the college graduate, with his diploma conspicuously displayed to the admiring gaze of all in search of “painless dentistry,” at rates of unheard-of cheapness, the enterprise flourishes, and the copartnership is a financial success. The time has come for the “brakes to be put on” and set hard on the traitorous graduates of dental colleges.

Paper by Dr. W. W. H. Thackston, St. Augustine meeting.

GOLD FILLING.

In Illinois Society.

Dr. Edmund Noyes.

No man can afford to allow himself to use the engine exclusively, because by so doing he would lose his skill and training in handling of hand cutting instruments. Dentin can usually be rapidly cut with the engine instrument, and the enamel can usually be rapidly split off or shaved with hand chisels. There are probably numerous exceptions.

In some of this work for the extension of cavities in sound territory for the safety of the operation it is my impression that sometimes it can easiest be done by a rapid undermining of the enamel, where we wish to extend the cavity, with a small and sharp bur in the dentin, cutting as little dentin as possible and getting rid of the enamel which is undermined by hand work with chisels, instead of trying to cut the enamel with burs. That is one suggestion. But there is a field here for somebody to work out scientifically, and, in fact, the whole question of instrumentation needs careful study and treatment; it needs much more attention than has been given it heretofore, particularly with reference to the shaping of cavities in teeth. Dr. Templeton told you how to make a water-tight gutta-percha filling. It has been suggested as a part of this manipulation that the great portion of the shrinkage of the gutta-percha takes place before its plasticity is lost, which implies that the instrument he speaks of using should be used for a little time, till most of the ordinary shrinkage of the material is over, and the manipulation has gathered it into the cavity to overcome it. The essential thing relates to the adhesion of the material to the varnished wall, so that the shrinkage which does take place will pull in the surface instead of pulling away the margins.

Beads should be tied on the tooth before the rubber-dam is put on. You can stretch the rubber down and get it over one first, then the other, and it will stay there, giving opportunity to force it down into the proximal spaces afterward. You will find in a good many cases that they will promote your comfort and that of your patient, and will abundantly pay for the enlargement of your resources by the use of them. The little white rounded porcelain beads are best. A glass bead is just as good, except for its transparency, which is not important. It should be round, and not broken off from a tube like those that were shown this afternoon. Some speak of the difficulty of getting them on.

There are few teeth, even if they are newly erupted twelve year molars, on which you cannot get a string with two beads, and tie it low enough so that it will stay.

In taking ordinary impressions when there are teeth remaining, the teeth should be lubricated with vaselin or oil, so that the plaster will not stick to them.

THE SUPPRESSION OF QUACKERY.

From the Presidential Address of Dr. Joseph Bauer, twentieth annual session of the Louisiana State Dental Society, February, 1898.

We are led back to the question of the suppression of the quackery extant in our midst. And it is, that no minor or unqualified person should be allowed to perform any operation in the mouth of a dental patient in any dental office. The utter failure of any provision of the State law to cover this point has permitted those whose avarice has exceeded their love of profession to obtain the services of such persons, at a salary so insignificant that the matter of employing half a dozen, or even more, would make no appreciable difference in the net proceeds of the business. To those unskilled persons are patients intrusted, and upon them only can be laid the responsibility for many painful and vexatious diseases resulting from their inadequate knowledge and inexperience. It is the province of the learned professional to care as well for the proper exercise and practice of his profession on the part of all those engaged in it as for his individual success. As a consequence, this is a matter which, perhaps most of all, concerns us, who claim to represent the legitimate portion of the profession in this State.

And to that end I would submit for your earnest consideration the advisability of taking the necessary steps towards the convocation of all the known and respectable members of our profession in convention at the earliest possible date. It should not matter as to whether or not they are all members of the Louisiana State Dental Society. Suffice it that they are reputably established as practitioners of dentistry in this State. To this convention should be submitted the absolute and immediate necessities of the profession in the way of proper legislation. The attention of every professional man would be at once attracted, for what would tend to benefit the calling in general would certainly affect his individual interests in the most favorable way. Once the movement is started, the accomplishment of the end,

toward which all honest and capable dental practitioners throughout the land have been making their way, in spite of numerous difficulties, would be, for us, well in sight.

Should these suggestions appear to you as but the slight beginnings of a reform in our profession in this State, much will have been already effected. It will but remain for you to bring your united endeavors to bear, and, as the result of concerted action, frame a law for the proper protection of the practice of dentistry in this State which will place it in line with its sister States, and especially in accord with the dental law of New Jersey, which is justly considered as the very best which has thus far been devised upon this subject. Then the profession in this State will attract as its followers none but those who are properly equipped, not alone with a thorough knowledge of the rudiments of an ordinary education, but as well with a profound understanding of its technical and mechanical requirements.

THE DUTY OF THE DENTAL PROFESSION TO THE PUBLIC.—

One peculiarity of the dental profession is that upon its shoulders rests the duty of educating the public. There is scarcely an institution of learning to-day which has not in its curriculum a treatise on physiology and hygiene, and its campus and gymnasium for the cultivation and development of the sinews of the body; but *the oral cavity*, the most important department in the animal economy, is passed with scarcely a thought.

The tooth-brush is more important than dumb-bells, and dental sanitation the first step in hygienic routine. * * * I admit the need of dental surgeons in the army and navy, * * * but the nursery needs dental attention more than the garrison, and the schoolboy more than the soldier. The proverb, "Train up a child in the way he should go, and when he is old he will not depart from it," holds as good in the physical as in the moral world; and the sooner we recognize the boy as the father of the man, and the baby as our most important patient, the sooner we will reach the ideal in dental achievement.

From a paper by Dr. I. P. Corley, Greensboro, Ala.

THE IDEAL DENTIST.—The ideal dentist is an incarnation of German learning, French art, English thoroughness, American push and Southern chivalry.

I. P. Corley, in Southern Branch National Dental Asso.

PECULIARITIES OF THE LEFT SIDE OF THE JAW.

L. P. Haskell.

In 95 per cent of mouths there is more depression on the left side of the upper jaw in the region of the cuspid tooth, than on the right.

The alveolar process is shorter on the left side than on the right, so that if the artificial teeth are set parallel with the jaw they will be short on that side.

In most cases the lower teeth are higher and more prominent in the region of the cuspid tooth on the left side than on the right.

Many times the left side of the lower jaw is farther from the median line than the right side.

Operators assert there is more decay of the teeth on the left side of the mouth than on the right.

Who can give a tangible reason for these conditions? In making artificial dentures these must all be taken into account.

It is a mistaken idea that a successful dentist must confine himself exclusively to his profession. True, the most successful dentist will give his best time and energies to his work, but a divergence of the proper kind will broaden and give him a stronger prestige among his patients.

A dentist acting in some official capacity for the town or city in which he lives, or being a member of a school board, is in a position to do good for the people of the community or the patrons of the district, and at the same time he is improving himself by becoming acquainted with the laws of his State bearing on municipalities and school districts.

Too many dentists are not successful owing to a lack of business training, and if more dentists divulged to the extent of doing outside work requiring business sagacity they would be more successful in every sense of the word.

Geo. H. Belding, Colmar, Iowa.

THE DENTAL ASSOCIATION.—The association is a great confessional when we recount our failures, pointing to where the hidden reef lies beneath the glassy surface. We bring our problems and ask advice. We also bring the treasures garnered as we climb the rugged steeps and scale the mountains of difficulties.

The association is a great storehouse which holds within its capacious vaults the accumulated wealth of hundreds of lives devoted to toil and study. Each member is a stockholder just in proportion to the zeal which he has for the advancement of his profession and his ability to assimilate the grand truths which it teaches. It is a kind of professional Mecca to which we make annual pilgrimages to pay tribute at the shrine of mutual progress, and acquire strength and preparation for the ever-increasing responsibilities of life.

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It has been said that the association consists of egotists seeking for office; of college professors electioneering for students; of the inventor advertising his appliance; of the depot-man peddling his wares.

But if a man is qualified to serve his profession in an official capacity and thus render efficient service to his followers, it is his duty to use all legitimate means for the attainment of a position of usefulness and honor. * * * It is the duty of the dental college to let the profession know what kind of material she has in her faculty, and to demonstrate the advantages she offers. * * * It is kind of the inventor to show us his appliance and show us how to use it, thus enabling us to avoid investing in something which we might be unable to use to advantage. And the depot-man confers a genuine favor on those of us who live in the country by his magnificent displays of the paraphernalia of our profession. So these accusations brought against the association are not to its discredit.

From a paper by Dr. I. P. Corley, Greensboro, Ala.

TREATING CHILDREN'S TEETH.*

Dr. T. B. Welch.

The hardest part of this business is to get the children. It needs tact and patience, and even then the dear little things will slip through your fingers. They have heard you were the devil; and if they have not been told so they instinctively believe it. Your first business, therefore, is to convince them you are their friend. But how can this be when they know your whole business is torture? Who can blame them for setting up their tremendous will against your murderous assaults? Put yourself in their place, with their ignorance and dread of the unknown, and

* Read before Maryland Dental Convention.

knowledge of the inevitable, and very likely you would be as childish as a child. With all the knowledge of what you ought to do, and what you must do, and what you intend to do as soon as you get a good ready, how difficult it is to submit to the inevitable in the dentist's chair! You hesitate, resist and postpone, you try, and draw on all your forces and get ready—and then seek to escape.

We should have more patience with these little ones. If we gave them more sympathy for their sufferings and fears and cowardice, if we gave them kind-hearted tenderness in our treatment, we could better control them. Ridicule their fears as you may, deceive them as you may, catch them with guile as you may, you cannot say all their forebodings are imagination. You know they are to go through what to them will be a terrible ordeal, and you may as well acknowledge it, and seek to prepare them for it. Even little children can be made philosophers. They can tone themselves up to pain if it is inevitable. Prepare them for it and it will be to them a life-long lesson of endurance and courage and triumph.

Having won your little patients to endure like good soldiers, it is for you to make the torture as little as possible, especially at the first sitting. Disappoint them favorably. If there is actual toothache, stop it; if there is great sensitiveness, overcome it; if a tooth must be filled, make your work temporary. And as for extraction, do it by magic, as well you may if nature has already done its part. Treat them so delicately, sympathetically and considerately that you will prepare them to come the next time with confidence in you, and their pockets full of confidence and courage and valor in themselves. Give them credit for all you can, and, perhaps, for a little more than they deserve; then seal your good will by some little reward—small, cheap and foolish to one older, but almost priceless to them because it is the proof of your sincerity and love. A dentist that has not a candy pocket is not wise. And he will have a drawer for little dolls and balls and other trinkets.

But you ask, "What can I do when I *must* hurt, and not play at it?" We, all of us, have so many ways of turning the corners where hurt lives, or of subduing the hurt if we must tackle it, that we can almost always favorably disappoint our patient. It takes a little more time, but it will pay in the end. Yet there are times when it is cruel to dally, and wise to do the inevitable promptly, leaving the soothing and explaining and reasoning till afterward.

In filling children's teeth gold is not necessary. Of course,

if the parent is able to pay for the luxury, and the child is easily and willingly controlled, a gold filling, even in a temporary tooth, may be inserted to tickle the pride; but cheaper fillings are quite as good. Also, in preparing the cavity of decay, severe labor is generally uncalled for. There is much of softened dentin which might be left; to remove it would be needlessly taxing the patience and endurance of the child, causing unnecessary pain, and making liable the exposure of the pulp. Base plate, red gutta-percha or other soft preparations of this useful substance, is sufficiently durable and easily inserted. Oxiphosphate is now made so durable that this may be chosen to advantage. Tin is no better than gold; even the common lead and tin foil is better and more easily manipulated. But a good amalgam or alloy is, perhaps, the best of all.

The immediate reward of treating children's teeth is, perhaps, less than any other part of our practice, and its annoyances and hindrances are the greatest. Unless, therefore, we can look on it as seed-sowing, we shall be apt to slight our work, and turn it away whenever we can. If we cannot win our children for the future, the less we have of them the better. But if we consider these little ones as our future patrons when young men and women, and still on as parents and men and women of society, we shall find an incentive to do our best, both in winning their affection and in doing our work.

Then, again, if parents are educated to bring their children to us early, there will be little necessity for torture. It is because visiting the dentist is a last resort for the relief of pain that the treatment becomes so painful.

We notice a few points of special interest:

1st. Are we not far too modest in calling attention of parents to this subject? There are few who do not need educating; and there is scarcely a day that we shall not have fitting opportunity to show parents the importance of our early supervision and treatment of their children's teeth. They will thank us for our interest, and generally follow our advice.

2d. An article in our local newspapers, now and then, would be appreciated. We might add, so that our readers might not think we were advertising, that we hope those interested would go to the other fellow for their work.

3d. Bringing the importance of prompt and proper attention to children's teeth before the public schools is a way of doing much good. Teachers and superintendents and trustees are aware of its importance, but my experience is that they neg-

lect this subject unless we give it our personal attention. I have never spoken before a school on the subject without being thanked for my effort, and without afterward feeling the practical effect of what I have said. It is still better if we first call the attention of the superintendent, or the school board, or some member of it, to the subject, so that they may prepare the way by giving notice to the teachers and scholars when we may be expected—not to make a staid, elaborate, lengthy speech. A few thoughts, well chosen and aptly expressed, are much better and will be more sure to be followed by an invitation to “come again.”

4th. Our school books on physiology and hygiene need revising. Information on this subject in these books is meagre indeed, and the little which is said is evidently the effort of a tyro or a physician. Who will take this in hand? Complaint is on the tongue of every one who has given this neglect attention, but no one acts.

5th. Having it understood that you give special attention to children's teeth on Saturdays, when the schools are not in session, is a good thing. I know dentists who make no engagements on Saturdays but for children, and it is generally a busy day. Be sure to have picture books, toys, puzzles or other amusements to please those in waiting.

6th. A little booklet setting forth this whole subject in a concise, familiar, practical way, I have found of much profit. My first experience was in sending through the post-office one to every family within ten miles of my office. Its cost was quite a sum, and hurt my conscience awfully because I was advertising, but it brought in the dollars; and, if it were not for exposing others as advertising dentists, I would add that hundreds of dentists have sent out the same little booklet with equal profit.

Become popular with children and you will be popular with their parents. The dear little innocent creatures will know no better than to tell all their little companions what a nice man you are, and how little you hurt, and show with pride a little filling you may have inserted. And they will tell their older brothers and sisters, and in many ways advertise you, in spite of your determination not to be an advertising dentist.

The worst of it is, when patients are drawn to you by your living advertisements you don't know how much to excuse yourself. Greatness has been thrust on you; work will crowd you, and filthy lucre will fill your safe, though you may protest that you are not influenced by such a sordid motive. It is too bad. And all this because you have become popular with the children.

TAKING A BITE.

Dr. A. O. Hunt, Chicago.

In taking the bite, make landmarks and notes of the characteristics you observe in faces, to be used when you make artificial dentures. Did you ever think of it, that you can almost count the experts in this department on the fingers of one hand? It is not strange that this subject has been neglected, simply because it requires a broader field of thought, broader effort, and, indeed, a better knowledge of the collateral sciences to get established in your mind a basis on which to build, than in any other operation that we are called on to do as dentists. It has always been called mechanical dentistry, and thought of as such. The results you want to obtain are entirely outside of the field of mechanics, and mechanics do not apply to the results, only in the methods of putting the materials together. The human form is not a machine that is put together like an engine. It is put together in a definite way, with varying modifications. This is true also of the relations of the teeth and lips to each other. These variations are constant. Each requires special care, special study, effort and observation as to the relation of the muscles in what we call their normal position. It required the dissection of more than twelve hundred cadavers to find out the normal position of the arteries in the human body. These variations are still present and confusing, with all the knowledge we have of anatomy.

With reference to taking an impression in plaster for a partial plate, or in taking a full impression of the teeth, I scarcely know who is the author of that method. But I have learned it was Dr. Angle's method of taking an impression of the teeth, which consists of using a clean impression cup evenly filled with plaster leaving but little surplus. Wait till your plaster has set hard; then slip the cup off, it having been oiled slightly, leaving the plaster all in the mouth. Two grooves are then cut in the hardened plaster on a line parallel with the cuspid teeth, not cutting quite through. Then with a quick pry with a pointed spatula or knife the anterior piece is wrenched loose. The lateral pieces are broken off with the thumb and finger. The large piece covering the roof of the mouth may readily be worked loose. Then you have four pieces which are easily united.

G. D. Sitherwood, in Illinois Society.

USING CLAMPS.

Dr. Ira B. Crissman, Illinois Society:—At a recent meeting of the Chicago Dental Society Dr. Fernandez described a method of using clamps on teeth which I think, if universally used, would get rid of the uncomfortable sensation around the tooth, and the tipping forward, pressing into the gum at anterior portion. He suggested that the points or sharp edges which ordinarily project and cut into the tooth structure be filed away and a small rubber tube be placed over the clamp, leaving the ends of the rubber tubing a little longer than the clamp, to prevent it from tipping, which it so often does, and is very inconvenient and causing great pain. I think the suggestion is a good one, and if used would be beneficial in every-day practice. Many dentists do not use the clamp on account of the saliva clogging the mouth. This trouble can be obviated by the saliva pump attached to the fountain cuspidor. The clamp should not be used unless where it is difficult to keep the dam away from the tooth, and where the cavity is situated on the buccal surface, answers a good purpose to keep gum and rubber away from tooth.

Sulfate of copper is a useful agent in the treatment of pyorrhea, and it is also a favorite of mine in the treatment of abnormal swelling of the gums from whatever cause. The gums are dried, and the copper applied by means of a piece of orange wood, whittled thin, which is first dipped in water, and passed into the copper, a quantity of the powder will cling to the stick; then pack the copper down between the teeth and swollen gums. You can use it freely. It is not necessary to exercise care as to the quantity of the powder to be used; let it remain there for two or three minutes, then with a syringe of warm water wash the excess away. You will be surprised in the course of two or three days, and also much gratified, to see the extent to which the swollen gums have been reduced. *A. H. Peck, in Illinois Society.*

LIQUID NITROUS OXID.—S. Coxeter & Son, of London, who supply most of the liquid nitrous oxid used in Europe, certify that their manufacture of it was brought about through the persistent energy of Dr. T. W. Evans, in 1869, who at that time first exhibited it in England, at the London Dental Hospital. Dr. Evans ordered large quantities of it from them for surgical operations during the Franco-German war.

IMPROVED METHOD FOR TAKING PARTIAL IMPRESSIONS.

One trial of the following method will be followed by constant use as results warrant. Difficulty of removal from mouth and separation are overcome with gratifying results as regards perfectness of impression and model; also patient's comfort, as little or no plaster remains, and no force is required in removal. Numerous other advantages will be observed by those following directions.

Having chosen proper cup-heat modeling compound, form into horse-shoe shape and place in ridge portion of cup. As only impression of teeth is required, insert in mouth and press into place. After it has regained proper consistency remove and trim palatal aspect close to teeth; also buccal surface, leaving as much of impression of gum as is required. Replace in mouth and press back into position. Remove cup, which, not having been previously heated, comes away easily. Request patient to hold compound in place; mix plaster, and carry as much as possible to palate by means of spatula. Then build up palatal surface of cup and press into place, thus carrying plaster to all parts where needed. When sufficiently hardened, remove. If perfect buccal aspect of ridge is required, plaster can be carried there by means of finger. A perfect union will be noticed between plaster and compound, with no overflow of plaster, which proves so disadvantageous in other combination methods.

A GOOD CEMENT.—An excellent cement for mending almost anything may be made by mixing together litharge and glycerin to the consistency of thick cream or fresh putty. The cement is useful in mending stone jars or any coarse earthenware, stopping leaks in seams of tin pans or wash-boilers, cracks and holes in iron kettles, etc. It may also be used to fasten on lamp tops, or tighten loose nuts, to secure loose bolts whose nuts are lost, to tighten loose joints of wood or iron, or in many other ways about the various kitchen utensils, the range, sink, and in the pantry fittings. In all cases the article mended should not be used till the cement has hardened, which will require from one day to a week, according to the quantity of cement used. This cement will resist the action of water, hot or cold, acids, and almost any degree of heat.

CURRENT THOUGHTS.

THINK FOR YOURSELF.

Dr. D. V. Beacock, Brockville, Can.

Our modern modes of living are very destructive of health. Physicians tell us that 85 per cent of mankind are sick, and that scarcely any one is what you may call perfectly well. The mad rush of life and irritability of the times have led to nervousness and consequent injury of the body. Pure foods are not properly selected, adulterated foods are increasing every year; and our bodies are actually starved. Improper methods of cooking, wrong habits of daily life and the lack of association with our great mother, nature, have made the existence of many a struggle rather than a pleasure; and the seemingly healthiest may be dead and buried in a week. Our race has degenerated physically. Men and women should try and get back to the original model of nature. There are laws of life and health. Every disease must have its cause and natural cure. Medicines, except in very rare cases, are always enemies of the body.

To every being that is born into this world healthy and vigorous, a limited amount of vital energy is given at first, as a stock in trade, to carry him through this life, and while under ordinary circumstances, and in the usual states and conditions, we can do but little to add to it, we can waste it lavishly in aimless and unprofitable operations and useless exertions. Nature may be said to keep an account current. Look out and not overdraw your account, for she is a stern creditor and makes no mistakes in her book-keeping. Look around you and see people dying every day, not from any immediate causes; oh no! but from the slow results of colds, malarias, overstraining of nerves, and the too prevalent abuse of the digestive powers, from overfeeding, laziness, dissipation, and a hundred breakings of the laws of health which date back ten or thirty years. Remember, it is all laid up against them. They have been slowly adding to the mortgage till the mortgage equals their capital, and then the account is suddenly closed. Nature generally charges interest also, and takes it out of the principal on an advance payment. Let me here change the figure slightly, nature will allow you to overdraw the account many times—nay, she will even allow you to use up eighty years of health in twenty-five years if you so

wish to. But remember she never either forgets or forgives, or makes a mistake in her accounts, and when you have drawn all that will ever be your due, she point-blank refuses to honor another draft, but, like a relentless cashier, she closes the window in your face, and you are dead! When I say that nature never forgets, I mean that the Creator requires the payment of every evil and violation at your hands, however small. Nature's laws are simply the Creator's methods of dealing with us. Old age is simply the harvest of what we sow in youth and middle age, and here let me say there is no such thing as rewards and punishments, no forgiveness, no forgetfulness—forever and forever the exact consequences. This is the law of nature in the physical world, this is the natural law in the mental world, and it is God's law in the moral world. This of itself ought to stimulate us to learn to think for ourselves and take the utmost care of our health.

Nature provides penalties, not remedies; there is no cure but in returning to obedience; the language of nature as well as of Scripture, is the soul that sinneth shall—what? not take medicine and get well, but shall die; if wrong is done evil must always follow.

Nearly all the diseases that flesh is heir to, aside from those produced by parasites, poisons and injuries in general, are the terrible outcome of defective feeding. Whatever is convertible into its own substance, the system appropriates or uses, but whatever is not transformable, it rejects. Here lies the grand distinction between food and poisons, of use and abuse. Of the fourteen elements needed in the body, and which must be supplied in the food taken into the system, those which supply the three great demands—vitality, strength and heat, are phosphates which supply the brain, nerves and bones. Nitrates which supply the muscles with strength. Carbonates supplying heat and fat. Now it is a wonderful fact that a grain of wheat contains all the fourteen elements of which our bodies are composed, and in very nearly the exact proportion for building them up. The nitrates are found in the outside shell, which is always thrown away in white bread; the carbonates, in the main portion, constituting two-thirds of the entire grain, and the phosphates in the chit or germ. In fine white flour, the center alone is used, while the best part is thrown away or fed to our domestic animals. How few mothers know that phosphates are demanded for their children; the result is that a large majority of them grow up with defective teeth, defective muscles, shattered nerves, etc., and all owing to the

ignorance of parents on the one subject of proper food. It is useless to try and supply their place with highly concentrated or manufactured phosphates. I remember hearing Professor Mayr state before a large audience of physicians and dentists, "that you might pack children in a lime barrel, feed them on lime stew or lime hash without effect, for the teeth will not take up a particle more. The lime has to be introduced through the proper channels and in proper form, for," said he, "the digestive department is just as full of red tape as that of any government. All its supplies must take a well regulated course, otherwise they will not be accepted." What the people need is less medicine, fewer doctors, and more instructions in the art of preserving health. Hygiene should form a part of our school curriculum. Children should be taught the mysteries of their own bodies, then the future generation would have little need of drugs and patent nostrums, they would know what to do when assailed by sickness, instead of making a funnel of their throats to pour nauseous medicines down, thus making a drug shop of their overworked stomachs.

I have read somewhere that Emerson said that "a sick man was a rascal!" I suppose he meant that no man had a moral right to be sick, as it is little less than criminal. Sickness is a crime against ourselves, against society, and against the Creator. The late Henry Ward Beecher used to say that he believed the time would come when one would be ashamed to acknowledge that he was sick. Sickness is only suffering for violation and broken laws. And all diseases are only remedial processes of nature to try and effect a cure. Nature trying to eliminate morbid or poisonous matter from the system. Dr. Hall says: "It might be laid down as a self-evident truism, that nearly all the ailments that afflict humanity come from the impurities that enter into the vital circulation from what we eat and drink, thereby finding their way into every part of the tissues of the human organism. These impurities may come directly from the food and drink thus taken into the system when they are deleterious, or directly from the fermented and decayed residuum even of the most wholesome food which is retained in some portion of the intestinal canal, and then absorbed into the circulation after it should have been discharged from the system." How would you expect a nation or individual to prosper, whose exports were constantly exceeded by its imports. Think for a moment of the appalling aggregate of over a thousand meals annually; at each one of them a small amount is consumed in excess of the sys-

temic ability to digest, oxidize and assimilate; gradually the bowels become clogged, poisonous matter is reabsorbed, and neuralgia, headache and low spirits intervene, the stomach being overburdened, it throws more work on the liver and it is unable to perform its functions properly, then it throws the extra work on the kidneys, and now they soon become deranged, and lastly the heart overtaxed, by redoubled efforts in pumping the blood through these organs, thus engorged and partially disabled. There results low spirits and a form of insanity termed melancholia, all caused by faulty metabolism and malnutrition. All substances remaining in the stomach undigested, ferment and act as toxic irritants, while the nerve centers, hypersensitive from the effects of heat, heave with the throes of terrible convulsions. Fermentation always prevents healthy digestion and assimilation, and soon the mucous surfaces become so paralyzed that they lose their normal selective power, as usually displayed in health. These poisonous products and acid-forming plants then begin to be taken up, and a partial paralysis of the surrounding parts affected. This brings about a dilated state of the blood-vessels, and stasis in them, the outcome of which is a peculiar hypernutrition, by virtue of which connective and even epithelial tissue of a very low type are formed in excess. We need not be told that the weakest, most exposed, most abused and most used part or organ falls a victim, because the operative influence brings such part or organ into a state best fitted to take on diseased action.

Healthfully feeding these tissues which require nourishing and starving those which have been over or unhealthily fed, will in time restore the equipoise of any unbalanced organism. Perfect health develops none but healthy physiological longings, but once derange the human machine, either by physical, mental or moral disturbances, and pathological appetites, desires, cravings and hallucinations are the result. One step in the wrong direction opens the way for a second, the third, and so on, till the human organism soon falls a victim to the disturbances of a multitude of deranging influences that result, if long continued, in fixing pathological habits of organs and tissue.

During the hours of repose the mucus secreted by the membrane lining the whole alimentary canal accumulates in the stomach and intestines, coating their walls with a thick, tenacious layer. Food entering the digestive cavities under these circumstances will become more or less covered with this tenacious coating, and thus be for a time protected from the normal action of

the digestive ferments. Moreover during sleep the stomach contracts so as to assume a somewhat tubular form, its lining membrane becomes somewhat puckered or throw into folds, and, as already stated, coated with viscid mucus. The stomach, then in its normal condition in the morning before breakfast, is not in a proper condition to receive and digest food. Now what should be done? Take a tonic or a glass of whisky, as is too often done? Nothing of the kind. A glass of hot water will wash out the mucus, partially distend the stomach, wake up peristalsis, and prepare the alimentary canal for the morning meal, add to this, when possible, a little exercise on a wheel, to stimulate the circulation, and facilitate the flow of blood through the capillaries of the digestive organs, and we have a plan which will not only engender health, comfort and vigor, but will cure many cases of both atonic and irritative dyspepsia. This alone is worth more than all the so-called liver pills, tonics, nerve powders, or stomach bitters ever invented and costs nothing, and what is better than all, it leaves no after effects or drug poisoning, which I have always dreaded a thousand times more than the primary disease. Remember, all patent nostrums only serve to deplete the pocket of the poor deluded victim who makes an experimental funnel of his throat, to fill the pocket of the manufacturer who gulls him and then laughs at his dupe's unbounded credulity. It ought to be known, that hot water, too, is a potent diuretic, stimulating the kidneys and protecting them from the irritating effect of scanty and highly concentrated urin. Even in jaundice and torpidity of the liver, hot water freely imbibed will stimulate the biliary function to healthy action, and the sipping of large quantities is often a simple and sufficient remedy; but unfortunately as I mentioned, this costs nothing, if it could only be dished up to the public in pills or bottles and labeled with some catchy name and sold at from fifty cents to a dollar, everybody would buy it, but this is a common sense remedy, and common sense is a rare commodity, and people when sick are hard to inoculate with sound common sense, and till some way is discovered for the accomplishment of that psychological feat, they will continue to run after every advertised remedial humbug. This is the class of dupes from which the patent medicin vender draws his enormous profits; like a bee in a garden of roses, they flit from one humbug to another, but unlike that energetic insect, they do not gather the golden harvest they are in search of—Health; it is always the other fellow that secures whatever there is of value.

Let us take a cursory glance at the lower five feet of the

alimentary canal, the colon. Dr. Turner says "that in this lies the cause of nearly all human ailments. Here is the breeding ground and a fertile soil for disease-bearing germs, to be carried from the colon and emptied directly into the lungs, through the portal veins, lacteals and lymphatics, by way of the thoracic duct." The question may be asked, why does this unnatural trouble arise in the colon of human beings? The horse and the ox promptly obey the calls of nature, and know no place or time, and are blessed with a clean colon, so are the natives of Africa. But the demands of civilized life insist on a time and place. Business, etiquette, opportunity, and a thousand and one excuses stand in the way continually, and nature's call is put off for a more convenient season.

Few people realize the real nature and danger of constipation, which is the cause of a large majority of human ailments. Many persons suppose, because they have a daily movement of the bowels, that they of course are entirely free from that trouble, whereas it is well known that they may have this terrible ailment in the very worst stages with the colon incrustated with impacted excrement of months standing, with only a small opening or central channel for the daily discharges that merely ooze through the illeo-cecal valve. This abnormal state of things long persisted in, results in partial paralysis of the cells of the follicles and villi of the digestive organs, so that the cells that take up food for nourishing the body lose little by little that selective power by virtue of which those products are only taken up that are required to support the tissues in a healthy manner. The impaired and partially paralyzed cells begin to gobble up carbonic acid gas, vinegar, and other deleterious elements. You must understand that it is by this selective power that the tissues receive their requisite nourishment, this power being impaired, these follicles and cells of the villi gradually begin to take on all kinds of deleterious matter, and after awhile the whole system becomes saturated with fermenting elements, and their products, carbonic acid gas, etc. It is this gas that is absorbed in the large bowel, which it so paralyzes that it loses its normal peristaltic power to pass the fetid matter along, and it remains there fermenting, decaying and paralyzing till the organ becomes filled with fermenting matter and jelly-like mucus. Could a person even in normal health be permitted to view with the naked eye the enormous quantity of fetid matter which is constantly carried about by him within the lower part of the bowels, all of which might be profitably dispensed with, he would be almost driven

to lothe himself and marvel that he could survive a single day surcharged with such a frightful mass of putridity.

Dentists either are or ought to be well aware that fecal accumulations are often the cause of reflex dental disturbances. I can always forestall an attack of dyspepsia by the subjective sensations in my own teeth rather than by any epigastric disturbances. My throat becoming sore I have long ago learned that it is not there that I am to search for the trouble, but twenty feet further down the same mucous tract. It is only lately that physicians have come to recognize that putrefactive processes in the intestinal canal play an important part in causing many diseases, the origin of which has hitherto been but little understood. How often do sudden deaths occur in individuals in apparent good health, where carefully conducted autopsies fail to reveal lesions that account for the sudden fatality. No doubt in most of these cases toxins enter the blood, by being reabsorbed from the colon, perverting and destroying its nutritive quality.

Now whenever we feel unwell, nervous, drowsy, cranky, snappy, tired, ill at ease, listless, bilious, etc., instead of having recourse to the following, as most of us are so prone to do in this our day of powerful sytomatic remedies, veratrum for the pulse, antipyretics for the temperature, pilocarpin for the secretions, morphia for pains, calomel for the liver, strychnia for the nerves, chloral for insomnia, all these agents which strike blows at the manifestations of disease and often lead to disaster by lulling the subject into a false sense of security. These remedies as often employed, only serve to hide the enemy's movements; in which they may actually become the ally of the disease without even being suspected. Prof. Bruch says, "it is better for the patient to suffer than have his life jeopardized by these remedies (?) which only obscure the real issue." To silence or even muffle the alarm drums of disease, is simply to invite a conflagration, and this is just what is done when any of the above medicins are given to obtund the sense of pain.

Let us avoid all these, think for ourselves, use common sense at least by assisting nature, obey her laws, try rest, fresh air, sunlight, proper diet, baths, external and internal,* and exercise, and in my opinion there is nothing equal to the wheel; for the dentist especially, it is far in advance of anything that I know as a health promoter, and best adapted to his special needs, giving abundance of exercise without fatigue. Why you need only just

*For an internal bath, use rectal injections of hot water not less than from one to three or even four quarts.

contrast wheeling with walking. Suppose that a man walks a mile, he will take on an average over 2,000 steps, at the same time bear in mind carrying the weight of his own body at every step, now when he rides a wheel, he will only make about 600 steps, at the same time requiring less force, and has no weight to carry and gets over the same ground in one-third the time.

Exercise on a wheel brings into action muscles that have lain almost dormant for years, increases the circulation, adds glame to the whole system, fills the capillaries with blood, by forcing it to the surface of the body, stimulates the vicera to increased action, thus greatly increasing peristaltic motion of the bowels, increasing and strengthening the abdominal muscles as well as the lower limbs, by forcing them or compelling them to draw more nutrition to themselves, for it is well known that nutrition is drawn into any part of the body in proportion to the amount of movement of that part. Here we see the great benefit of plenty of exercise in keeping the body strong and healthy. Again, passing through the air on a wheel so swiftly exerts an exhilarating influence, causing a glow of gladness to overspread the whole body, suffusing the cheeks with a roseate hue of health; fills the lungs with pure air, oxigenates and purifies the blood, it expands the lungs by deeper breathing, thus using up more oxigen, this creates a keen and healthy appetite, aids digestion, stimulates nutrition, favors metabolism, opens the pores of the skin, causing it to expel and thus help the other organs to eliminate effete matter and waste products, that if allowed to remain would clog up the pores and poison the whole system. Then a good bath with thorough rubbing will cleanse the body by removing the dead animal soil thrown to the surface, some of the water is absorbed and gets into the blood, thinning it and aiding it in its passage through the blood-vessels. A thorough rubbing, together with a little massage, assists the circulation and prevents embolism in the finer capillaries, light exercise with dumb bells and indian clubs are all excellent aids to health, but the wheel takes us into the country, puts us in close communion with nature, quiets the mind, soothes our ruffled tempers, takes us away from business troubles, strengthens the nerves, drives away all melancholy, prevents mental worry, cures insomnia, liver troubles, dyspepsia, and is a sovereign remedy for all neurasthenics, if persevered in and not abused. *Ohio Journal.*

DENTAL COLLEGES OF THE UNITED STATES—MATRICULATES AND GRADUATES, SESSION '97 AND '98.

COLLEGE.	MATRICULATES.	GRADUATES.
Baltimore College of Dental Surgery.....	232	75
Ohio College of Dental Surgery.....	206	66
Pennsylvania College of Dental Surgery..	376	100
Philadelphia Dental College.....	409	141
Missouri Dental College.....	124	39
New York College of Dentistry.....	221	47
*Dental Department, Harvard University..	130	46 seniors
† Boston Dental College.....	...	...
*Dental Department, University of Michigan	226	57 seniors
*Dental Department, University of Penn- sylvania.....	438	100 seniors
Dental Department, Vanderbilt University	184	54
Indiana Dental College.....	187	52
Dental Department, Howard University..	27	5
Dental Department, University of Tennes- see.....	98	14
† Dental Department, University of Cali- fornia.....	...	...
Dental Department, State University of Iowa.....	148	61
Kansas City Dental College.....	85	32
Chicago College of Dental Surgery.....	525	163
Dental Department, University of Mary- land.....	207	64
† Dental Department, National University..	...	...
Northwestern College of Dental Surgery..	76	21
Dental Department, University of Denver..	47	5
† Louisville College of Dentistry.....	...	...
School of Dentistry, Central Tennessee College.....	19	4
† Dental Department, Columbian University	...	...
Dental Department, Southern Medical Col- lege.....	80	13
Dental School, Northwestern University..	480	175
*College of Dentistry, University of Min- nesota.....	96	16 seniors
Dental Department, Tennessee Medical College.....	14	5
Dental Department, Ohio Medical Uni- versity.....	103	14
Western Dental College.....	203	54
*Dental Department, Detroit College of Medicine.....	97	26 seniors
New York Dental School.....	50	10
Dental Department, University of Buffalo	178	66
Dental Department, Western Reserve Uni- versity.....	90	28
† Dental Department, University College of Medicine.....	...	...
Cincinnati College of Dental Surgery.....	89	18
Birmingham Dental College.....	34	8
Dental Department, Milwaukee Medical College.....	91	17
Atlanta Dental College.....	185	61
Tacoma Dental College.....	33	10
Dental Department, Marion-Sims College of Medicine.....	75	16
Dental Department, Baltimore Medical College.....	60	18
† Dental Department, University of Omaha	50	8
† Pittsburgh Dental College.....	158	18
† Dental College of Physicians and Surgeons	...	...
† Colorado School of Dentistry.....	...	...
Total.....	6,131	1,726

* Commencement not yet held so give number of seniors.

† Applicants, but not yet members of Nat. Association of Dental Faculties.

‡ Would not give information asked.

Ohio Journal.

SOUTHERN BRANCH OF THE NATIONAL DENTAL ASSOCIATION.

President's Address.

The president, Dr. E. P. Bendler, Danville, Va., in his annual address, dwelt at some length on the objects had in view in the so-called "Consolidation" and the immense difficulties encountered by the two committees in their desire to formulate a plan that should do most to further the interests of the dental profession, the work accomplished being really the formation of a new organization, with provision made for branch organizations—one in the East, one in the South, and one in the West. As the majority of the members of the "Southern" did not desire their association to go out of existence, by an express understanding that organization has been continued as the Southern branch of the National. The "American" might have continued as the Eastern branch, but the majority preferred not to do so. It has, therefore, passed out of existence. There are good reasons for the continued existence of the "Southern." Such an organization is needed, not only for scientific advancement, but also from a social standpoint, the true Southerner being a social animal, created that way, with a desire to know each other personally, looking forward to the annual renewal of personal friendships. A meeting of Southern dentists is never a failure, even if there are but few papers, small discussions and but little in the way of clinics. The most helpful hints are given in private talk. We know and appreciate the grasp of the hand, the welcome in the eye. Cold science is not all of professional life. After brief but feeling reference to the past of the old Southern Association, whose history is embalmed in the hearts of its members, the present position of the association as a part of the National Dental Association was clearly defined, with an earnest deprecation of the cry of "sectionalism" that has been heard in some quarters. The question of meeting expenses was briefly discussed, and also the best time for the annual meeting, the opinion expressed being that the month of February is best for several reasons. It is the most pleasant season in the Gulf States; it is not usually a very busy month among dentists; it will not conflict with the meeting of the National Association.

The importance of association work was pointed out, and the question of how to reach and attract non-members discussed. Examining Boards and college faculties, and the means of reconciling the difference between the respective National Boards; the

appointment of dental surgeons in the army and navy, and also as examiners for insurance companies; dental patents; the Army National Museum and Library were among the subjects recommended for consideration at the present meeting.

Dental Weekly.

AN INTERESTING CASE OF SLOUGHING OF THE GUMS.

Dr. H. B. Hinman, Bucyrus, Ohio.

On August 7th, of last year, one of our local physicians called at my office with one of his patients whom he had been treating for slouging of the gums, till the symptoms had become so alarming that he decided to turn the case over to me.

The patient had his teeth cleaned by another dentist some three weeks previous to his coming to my office. His gums were then in a healthy condition, but they rapidly became inflamed till, when he applied to me, the gum septum had sloughed away to the process in the interdental space between every tooth in the mouth, and the festoon of the gum was also involved all the way around, on both the upper and lower jaw. The patient was unable to sleep the night before on account of the copious fetid discharge which dropped back in his mouth and filled his throat. He had also lost several pounds in the previous week and had some fever.

My treatment was to forcibly syringe out each interdental space, using pyrozone in my water syringe. I followed this by thoroughly cauterizing the whole diseased tract with a saturated solution of trichloroacetic acid, carrying it up to the process in the interdental space, by means of a few shreds of cotton wound on a nerve broach. I then directed the patient to rinse his mouth thoroughly every half hour, using alternately pyrozone and euthymol and holding it in his mouth for three minutes.

When the patient reported on the following day the change for the better was astonishing, as well as gratifying both to his physician and to me. All purulent discharge had ceased; the patient had rested well during the previous night and felt much better. I pursued the same treatment as before, with the exception that I used tincture of iodine instead of trichloroacetic acid this time. On the two days following this I used merely the pyrozone, he, in the meantime, using the mouth washes regularly. When he returned a week later, his gums had assumed their normal condition, and have since given him no trouble.

I have no doubt the condition was caused by infected scalers, and it should be a lesson to us to always sterilize thoroughly all instruments used in and about the gums.

Ohio Journal.

DENTAL DETECTION OF CRIMINALS.

Poachers were in a Yorkshire Assize Court charged with the murder of a keeper. One of the prisoners had the mark of a bite on his wrist, and an examination of the jaw of the murdered keeper showed that he had a peculiar conformation of the teeth. Plaster casts, both of the wounded wrist and of the murdered man's jaws, were made, and, the two tallying exactly, the man was convicted. In France, a man accused of the murder of a widow, had marks of bites on his right hand. The poor woman had one tooth in her upper and two in her lower jaw, and a cast made showed that these fitted exactly, and without the shadow of a doubt, into the wounds in the hand of the accused. But even more remarkable still was the evidence provided by dentistry at Manchester Assizes, not long since. A gentleman, who had a small dog with him, was attacked on a dark night by a ruffian who, after knocking him about, robbed him, and then promptly effected his escape. A tramp was arrested for the crime, but the prosecutor could not swear to him as the culprit, the night having been so dark, but the injured man pointed out that he had bitten his assailant on the hand, and that his little dog had also assisted with his teeth. The man arrested had marks on his hand, and he also bore the marks of a dog-bite on his legs. He accounted for the latter by saying that a farmer's big dog had worried him. A dentist was, however, called in, and he showed the court and jury conclusively that the prosecutor's little dog must have produced the leg wound. The murderer of a Herr and Frau Schneider was convicted at Vienna by means of a dentist's skill and an apple which had been bitten and left near the scene of the crime. The teeth of a man suspected fitted exactly with the bitten apple. But perhaps the most singular of all these points of detection by dentists was provided by the bringing to justice of the murderer of a banker in St. Petersburg. Just near the dead body was a much worn cigar-holder containing a half-smoked cigar. From the particular excellence of the cigar itself it was supposed at first that the banker must have been smoking it, and yet this very excellence tallied but strangely with the poor quality of the cigar-holder. Certain employés of the banker, to whom suspicion pointed rather vaguely, were, by the direction of a shrewd police magistrate, examined as to their teeth and jaws by a dentist, and the guilty man stood detected at once. He showed how the teeth of the accused fitted precisely into the marks on the well worn cigar-tube. *Dental Record.*

DR. EVANS' WILL.

The dispositions of the late Dr. Thomas Evans are disputed by some of the surviving relatives. It will be remembered that the deceased left about \$5,000,000, to be spent in erecting a museum in Philadelphia, which was to be called the Dr. Thomas Evans Museum. It was to contain all the late dentist's personal belongings, decorations, and art collections, and to be a lasting monument to his memory. To carry out this will he appointed executors, who, in the event of the will being faultily drawn up, were to become the universal legatees, with the moral injunction laid on them to fulfill the expressed wishes of the deceased. Any beneficiary under the will who attempted to attack its provisions was to be excluded, in virtue of this attempt, from the heritage assessed to him.

The Doctor's nephew, the Marquis d'Oyley, and his heirs, were deliberately, and by name, excluded from the will. However, legal measures are now being taken to prevent the executors of the will (who also occupy an implied trusteeship for the institution to be at some time founded by some one not named) from declaring the will null and void, with the exception of one clause, which would enable them to put the entire estate in their own pockets. The second stage of the litigation was for the appointment of a liquidator, who shall be unconnected with any of the conflicting interests. The case came before a Paris judge, sitting in Chambers. The application was not granted.

British Journal.

In caries of the teeth the acid produced by microorganisms first attacks the enamel substance, causing death of the substance. Therefore we have death right away. I need not say first, but it attacks that living substance and causes death; there we have actual death; that is, actual death may occur even ahead of the breaking down of the lime salts, or dissolving of the lime salts, but in erosion we have simply an acid condition that penetrates only as fast, or about as fast, as it is rubbed or worn away, penetrating no deeper than a file would in cutting it away, yet the distinctions between the two I could not give. Only in caries we have a diseased condition that can be recognized as true death, while in the other it seems to me more as though it were not only erosion, but a wearing away as well. We have had ulcerated teeth, some of them have had two.

Dr. Cattell, in Review.

CATAPHORESIS.

Dr. E. J. Perry, Chicago.

I am using cataphoresis, and I am much pleased with it. I have used it probably on seventy-five or eighty patients, and possibly it has been employed one hundred and fifty times in my office. I have not had any trouble with it. I have not had any untoward results, barring one case, where we had severe pain following the extraction of the pulp and the immediate filling of the root, which I ascribed to hemorrhage at the apex of the root, and the fastening of a clot in there beyond the root filling. A clot of blood in the root of a tooth will become putrescent and septic in twenty-four hours. You may devitalize a pulp by any other method and immediately seal it, and it will not become putrescent sometimes for weeks and months, but a canal filled with blood will become very putrescent indeed in a few days. I presume this clot of blood not being absorbed, and the root filling pressing down on it, caused great pain. This is the only case of untoward result that we have had from using cataphoresis. I think that it is our duty, as dentists, to welcome the use of cataphoresis. Because we do not know how this anesthetic condition of the pulp is brought about is not a sufficient reason for not using it. I do not think there is any one who has a clear solution of the manner by which anesthesia is brought about by the use of nitrous oxid. I do not know that it has ever been settled. There have always been opposing factions as to what really causes insensibility, and still the merest tyro of a dentist attempts to use nitrous oxid.

I do not think the position entertained by some in regard to the use of cocain is a consistent one. Dr. Hoff, of Ann Arbor, has a paper in the December *Review*, which I believe he read before the Minnesota Dental Society, in which he states that the use of cocain cataphorically has been abandoned by the leading lights of the profession, and that many enthusiasts had been born about the time of cataphoresis. God bless the enthusiasts, anyhow. I like those kind of fellows, but he did not seem to. And then he goes to work in the same article, after deploring the use of cocain, and fearing its toxic effect, etc., and advocates the use of it and eucain hypodermically. They have gone so far and said so much about it that in the *Dental Register* they have advertised Dr. Hoff's prescription, his hypodermic tablets for local anesthesia. Here is the prescription:

Cocain	$\frac{1}{2}$ grain.
Sulphate of morphin	$\frac{1}{8}$ grain.
Sulphate of atropin	$\frac{1}{200}$ grain.
Sterilized water	30 drops.

Sig.—Mix and inject hypodermically 15 to 20 drops.

It seems to me a man has much nerve that will do that, and then complain of the dangers connected with cocain when used cataphorically. I intended to have had some experiments performed. I intended to extract a tooth, or get one that was extracted, in a fresh condition, put on a dam, and use the cataphoric outfit on it for twenty minutes or so, to find out how much cocain there was in the pulp of the tooth, if it would pass into the tooth and into the dentin. I do not use cocain in removing pulps exclusively. I use arsenic. I do not think any dental practitioner can lay down an inviolable rule and say, "Throw arsenic away, now I am using cataphoresis." I do not think it would be wise to do that with arsenic. I welcome cataphoresis as a part of my equipment. I use it more largely than in anything else in excavating sensitive cavities. I do not believe I am going to hurt my patients because I use cataphoresis. It is true, it takes a long time to use it. I do not care to use it till I have a cavity that I cannot prepare without inflicting great pain. Then I use it with convenience, without fear or hesitation. Some gentlemen say they are afraid the pulps will die after the use of it. No gentleman with whom I have communicated knows of a pulp that has died, and I have not seen any that have died. Maybe there are those who have had that unfortunate experience with cataphoresis. You may excavate deeper than necessary under cataphoresis, and thus produce a cause resulting in death of the pulp. Extreme care is necessary here. In the use of cataphoresis we must insulate a tooth. You must put on the dam, so that it does not leak, and with such care as you would if you were going to fill a cavity with gold. Furthermore, the current should not leak, but should be directed through the tooth itself. I use the Victor apparatus and a battery. I have never hitched on to the street circuit. I use a saturated solution of cocain in this way: I take a few grains of the crystals on a little piece of glass, and then take a pledget of cotton, which will fill the cavity loosely, wet it with water, it will dissolve the crystals instantly. I put that into the cavity, and put my positive electrode on to that. I turn the machine as fast as the patient can endure it. I do not always give them thirty volts. I have excavated decayed cavities, in one instance in particular, for a boy of thirteen. The boy went up in the air, so to speak, when I attempted to excavate

these cavities, and it was impossible to do anything with the little fellow. The tears ran down his cheeks, and it was out of the question to proceed and excavate those cavities. The teeth were very sensitive. In this case I used only five volts for seven or eight minutes. I went ahead and excavated the cavities, and filled them with gold. I could not have done it had I not had this apparatus. I could relate case after case of troublesome gingival cavities that are extremely sensitive, and I have removed pulp after pulp. Saturday, I removed the pulp of a central incisor, where the tooth was absolutely sound, and I used it as an abutment for a bridge. I removed the pulp in about a half hour from the time I started. I used cataphoresis twenty minutes, drilled in, extracted the pulp, and did not hurt.

I do not fill roots as I used to fill them. Experience has taught me that hemorrhage follows extraction of the pulp, even after we have wiped it out with pieces of cotton and bibulous paper, and we are uncertain that it is stopped. Even if we are unable to get a color out of it, there may still be some hemorrhage. I fill the canal with cotton and some essential oil, probably eucalyptus oil, seal it in with gutta-percha, and fill the root later on. I find when I do that the patient has no pain following extraction of the pulp. I have done this in old and young patients, and I do not have the bother about having something by my side, such as strychnia, to give as a heart tonic. I am running against no trouble, that I might have if I was using chloroform or ether, or cocain hypodermically, but where I have to use it, and where I can use it and it is indicated, I find it is in my practice a very valuable aid. I consider cataphoresis a great discovery, and when its use is systematized and understood—when it shall have become an accepted practice—it will be a great blessing to humanity.

Review.

PARDONABLE SECTIONAL PRIDE.—Nowhere on the face of the earth has manhood grown to a more perfect stature, or womanhood bloomed with so radiant a beauty, as here in our beloved South land, where the very atmosphere is laden with the rich aroma of sweet perfumes. The wise Creator did much for every clime, stamping on the canvas of the universe the impress of His artistic being, and filling the art galleries of humanity with the sculptured beauty of many a rare and beautiful soul. but when the Lord made "Dixie" he did His best.

I. P. Corley, in Southern Branch National Dental Asso.

DENTISTRY IN EUROPE.

Dr. A. W. Harlan, Chicago.

My experience in Germany as a visitor has mostly been as an eater of dinners and luncheons, visiting the dental colleges, attending conventions; so that I am sure from that standpoint they are a fine body of men. The practice of dentistry in Germany is on the upward grade. There is no doubt about that, because they are not only making successful schools in Berlin, Breslau, Halle, and in other German universities, but they are giving students a thorough training in these schools; and while they do run more to plastics than gold fillings and pivoted teeth, yet any one who is in the habit of looking at the German dental journals from month to month, and from year to year, as I have done for the last twenty years, cannot but have noticed that the papers are of better quality; the illustrations are good, and better elements of practice are being adopted throughout the German empire.

I have visited Professor Miller at his house and in his office, and also Dr. Sylvester, and also the late Dr. Abbott. Dr. Abbott was the first man to call attention publicly to tin and gold as a tooth filling material, although he was not the first to use tin and gold in combination in filling cavities in molars, and other teeth, because the late Dr. Westcott, as early as 1843, said there were some dental practitioners in the United States who were in the habit of filling a third or one-half of large cavities in molars with tin and covering with gold in order to be economical in the use of gold, their object in using it not being the same as Dr. Abbott's. In some of the reminiscences of Dr. Westcott it is claimed that he was the discoverer of the cohesive property of gold, but he did not publish his discovery until nearly sixteen or seventeen years after Arthur had written his book, so that for the uses of posterity his name cannot go down as the discoverer of the cohesive properties of gold. In an article published in the *Dental Cosmos* in 1873, he writes about in this wise. The postage on letters and packages in those days was high, and in writing from New York, he said: "Can you not cut out the sheets of paper which separate the gold leaf, and make it less expensive to send gold in the package to me?" Unfortunately for him, when the package came, he found that all the sheets had stuck together, consequently he could not use them. Arthur published his book in 1857, so that I think the credit is due Arthur of having discovered the cohesive properties of gold. There are independent discoverers of many things;

that is, without one man knowing in California, for instance, that another one in Australia has had the same idea, and perhaps these men have only given the idea publicity in their particular neighborhood.

To go back to the subject of practice of dentistry in Germany and in foreign countries, we are not going to have many American dentists in Germany, Switzerland, Russia, Belgium, France and Great Britain for very many years, for the reason that the laws that have been enacted in these countries are of such a prohibitory nature that it will be impossible for any of our practitioners to go over there and practice dentistry as we practice it, because they absolutely refuse to examine our graduates even in their native language. There is no comity between the nations any longer, and if any one of the gentlemen who may be present desires to practice to-day in England, he can put out the sign "George Jones," but he cannot say "George Jones, D.D.S.," or "Dr. George Jones, American Dentist," or "George Jones, Dentist," or anything of that sort, because they would swoop down on him and close his establishment. One of our Chicago graduates located in Munich. He had a little sign, which read "Zahn-atelier." They soon closed him up. The police came around, and told him it was about time for him to move, and so he moved, and came back to Illinois.

From my own observation in Germany the fees are large in a few offices, but are even smaller than in Chicago. The sittings, as Dr. Buckley has told you, are short, not only in Germany, but in other parts of Europe.

I had the pleasure of spending several days with Magitot, who is dead now, and I could tell you something about his method of practice. He was in the habit of coming to his operating chair at eleven o'clock in the morning, and he stayed there between eleven and three. He would see on an average of five patients an hour. He would put in cohesive gold fillings during these short appointments, make his replantation and implantation cases, and everything of that sort in short order. He had his offices fixed so that a person came in at one door and went out through another. His rooms were arranged in such a way that the patient never saw the room he originally entered. He had a large income. We talk some about large incomes of American dentists in Paris. The income of French dentists in Paris largely exceed the income of any American dentist at present located in Paris, because they employ many assistants and really do what we would call a large business. The head of the establishment

is a man of education and of great business ability. I remember one man concerning whom I was assured by several men of veracity that his practice amounted from fifty to sixty thousand dollars a year. Well, there are not many incomes of dentists in Chicago that are larger than that. It was said that he had been in receipt of such an income for nearly forty years in Paris, and yet there is not a dentist in this room who ever heard his name except myself.

I know from my own experience and observation that there are quite a number of Germans in Berlin and Breslau who have large incomes in consequence of the employment of two or three or as many as six assistants. This is a favorite method of increasing their incomes. There is one thing they do in Germany much better than we in the United States, and that is, they make cement fillings in teeth with more care, and they last longer. We will find that those Germans who come to this country, who take reasonable care of their teeth, have cement fillings that have been inserted six or eight years, and still in good condition. Whether they use better cements than we do is a question I am not able to answer.

Review.

A CLINIC ON A FUSIBLE ALLOY.

Grant Molyneaux, D.D.S., Cincinnati.

Woods' metal has been used in dentistry for many years, and is known to contain bismuth, cadmium, tin and lead. The alloy I propose contains the same ingredients, the proportions being changed so as to produce an alloy that may be cast into a modeling compound, or wet plaster of Paris impression, and give a smooth, accurate model or die in metal.

The advantage of being able to cast metal directly with wet plaster or modeling compound can be appreciated by all practitioners of experience, if the model or die be accurate. We feel safe in saying that an alloy composed of five (5) parts of bismuth, three (3) parts of lead, two (2) parts of tin, and two (2) parts of cadmium, properly compounded, will produce, when poured into either of these impression materials, a more perfect model than can be obtained by the use of plaster; but a model of this alloy cannot always be used in place of plaster, as in vulcanit or celluloid work, for the fusing point of the metal is about 130 degrees F. It is especially designed for making a perfect die and counter-die, with the expenditure of not over five minutes' time, and with the simplest kind of apparatus. By the use of such an alloy the

difficulties of sand molding are overcome, and the production of a perfectly adapted plate is the result. To successfully use this or any low fusing alloy, several points must be constantly observed:

1st. Castings are sharpened and nearest perfect when the alloy is poured close to the congealing point.

2d. Overheating causes a loss of time and deterioration of the alloy.

3d. To make a perfect and smooth casting in modeling compound, the impression should be first oiled, and then the alloy is cast in a mush-like consistency, when it will fall in a thick soft mass into the impression which is quickly jarred on the table, cooled in water and separated. A little practice will enable the operator to produce a perfect model in every instance.

4th. Take a plaster impression directly from the mouth, soak it thoroughly with sperm oil, and pour the alloy at a little higher temperature than for modeling compound, and let it stand till cold.

5th. To obtain a thick base for the model take a thin copper strip, or heavy writing paper, about ten or twelve inches long and two inches wide, wrap around the impression and hold in place by snapping over it a small rubber band. Fill in spaces between band and impression with soft putty, which will always be ready for use by being kept under water. (A half pound screw-top vaselin jar half filled with soft putty and covered with water will keep quite soft for years.)

6th. To make counter-die, wrap the copper strip around the base of the die, and fill all undercuts and unnecessary parts with the putty, paint over the surface with whiting dissolved in water or alcohol, and cast the alloy as cold as possible.

7th. Before remelting castings, they should be cleaned of all putty and other dirt.

If, however, the metal becomes contaminated it can be cleaned by heating till it becomes perfectly fluid, when the impurities can be removed with a piece of blotting paper. One illustration of the use of this alloy may be suggestive of its many valuable applications.

In adapting a gold or platinum base for full dentures where the recession over the tuberosities and anterior ridge is so great as to make sand molding without a core impossible, make the model or die of fusible alloy by casting into the impression. For such a case always use plaster, as this can be broken off in such a manner as to be restored and a second die cast.

On this second the relief or vacuum chamber, made of block tin, can be attached with thick shellac varnish, or the relief can be first trimmed out of the impression.

Use the second die for the first stamping of the plate, making the adaptation to the undercut as close as possible with riveting hammer.

Try the plate in the mouth, and properly trim and wire if necessary.

Replace on the used die and wrap the plate and die with one covering of cheese cloth or thin paper, place in the Parker shot-swaging device and swage.

The plate cannot now be removed from the die, but by placing it in hot water the metal will run out of the plate, leaving it unchanged in shape.

It can now be polished, and after transferring the relief from the old die to the unused one, the plate is sprung onto it, and swaging with shot and melting the metal out as before, will leave the plate with an adaptation that cannot be procured by any other method. In taking an impression for metal castings, it should be a little thicker than usual, and any number of dies can be made from the same impression, all alike.

The compounding of this alloy requires the greatest of care in protecting it from the action of the air during the first melting and in the manner of adding the metals, as it never again approaches the first heat except by carelessness; the metal will remain permanent in composition and working qualities indefinitely.

The necessary expense of this alloy, which at first may seem unreasonable, will be saved in the saving of time in one difficult case.

Ohio Journal.

CEMENT FOR RUBBER ON METAL OR WOOD.—The following, from a German paper, is said to make an excellent cement for bicycle tires, and, as many dentists are wheelmen, it may prove useful: Put one part of shellac, broken into small pieces, into ten parts of strongest ammonia water, and set it aside for three or four weeks, or till the mass becomes entirely fluid. In use the liquid is applied to the India rubber surface and the latter applied to the metal or wood and firmly wired or corded thereto. when the ammonia has evaporated, a complete joint is formed between the two surfaces.

Dental Weekly.

PROSTHETIC DENTISTRY.

Dr. H. A. Smith, Cincinnati, Ohio.

The subject for the evening, "Prosthetic Dentistry," suggests the oft-repeated remark by dentists, "There is nothing in the practice of prosthetic dentistry." Unfortunately it is true that the dentist does not, as a rule, receive just compensation for his efforts in this department of practice.

Inquiry as to the cause of this condition of things suggests, first, that a uniform fee for "sets of teeth" of the same kind, as is the practice of many dentists, is unreasonable, not business-like, and a positive injury, not only to the individual practitioner, but to the profession generally. A fixed fee for this service implies that a set of artificial teeth is a product that can be turned out in a given time and at a uniform cost. The truth is, however, that every set of teeth, especially a full denture, is an experiment. There is, in the first place, the element of uncertainty as to adaptation. Next, the idiosyncrasy of the patient must be taken into account, and then the sisters and the cousins and the aunts frequently have to be considered. Every experienced dentist knows that it is often worth two or three times as much in money to make similar dentures for two different patients. Time and skill enter into the value of productions of this character, and they should be paid for in proportion to their expenditure.

Second. Is it in accordance with correct business methods to always charge the rich and poor alike? The inability of a class to pay for our services may be in a measure compensated for by asking an increased fee from the well-to-do class. This is the custom usually followed in medicine and surgery and in the law. Even the minister expects a larger contribution from the rich member of his church than from the poor members, though the spiritual welfare of the rich and poor is of equal importance.

The immediate effect of the adoption of a gradation in fees in prosthetic work would be to bring up the quality of these operations. Opulent patients would receive our best efforts—that is, good working dentures in combination with the essential artistic features, while those less favored with worldly goods would get from our hands good, practical work, with the artistic element not wholly left out, as now frequently is the case.

That the practice of prosthetic dentistry may be made compensating, both the dentist and his patient should be brought to realize fully the old familiar truth: "The laborer is worthy of his hire."

Indiana Dent. Jour.

THAT BROKEN BLOCK.

Dr. C. W. Bard, Slippery Rock, Pa.

We find it when we least expect it; it mars our work, and patrons object to it; it ruffles our temper; cheerfulness, sunshine, kind words, are conspicuously absent by its presence.

One of the most aggravating things in the laboratory (for those who do rubber work) is to open a flask and find gum sections fractured. I offer the following suggestions:

It is a little thing to bevel our gum sections and wax only to depth of bevel. It is a little thing to cleanse perfectly the labial and buccal surfaces after case is waxed. First, with benzine; second, with soap and water; and finally with alcohol, for the least particle of wax remaining on those surfaces will become absorbed when investment is heated, leaving your blocks without support, and fracture from pressure is the result.

It is a little thing after removing wax from investment, to place the two parts of flask together, and thereby learn in what way they close with the least resistance. Apply this knowledge in closing the flask when rubber is packed. Try these few suggestions and you will be agreeably surprised with the result.

"Think naught a trifle, though it small appear! Small sands make the mountain, moments make a year, and trifles, life."—
Young.

Ohio Journal.

NEATLY DREST.—There is an exquisit charm about a neatly drest woman. She does not wear her hair loose, as if it is just about to fall on her shoulders. Her gloves are not ript at the seams, nor are any buttons missing from her boots. Her veil does not reveal a hole over her chin, nor does the binding of her skirt show ragged in places. Not many women show their tidiness in these details, but the well-groomed woman considers that neglect in these little things is full of shame to womankind. Note the well-drest, tailor-built woman. Her cloth gown fits her without a crease, and there is neither speck nor spot on it. Her linen collar and cuffs are snowy white, and remain properly fixt in their places. Her gloves do not wrinkle, but button smoothly over her wrists; her shoes are dainty and polished. Her bonnet or hat is pind on straight, and her hair is neatness itself. She is the picture of delicate finish and wholesome order. Would that we could come across her somewhat oftener!

Family Doctor.

TO PRODUCE SPRING TEMPER IN SWISS BROACHES.

To draw Swiss broaches to a spring temper they should be placed on a steel, iron or brass plate, one-eighth of an inch in thickness and three inches square. This should be held by pliers or forceps over the flame of a spirit lamp, and be kept continually moving over it, so as to keep the plate as uniformly heated as possible. The broaches should be watched very carefully, and when they become of a dark blue color they should be dropped in cold water.

Dental Weekly.

FORMALDEHYDE.

Formaldehyde is at present the most popular antiseptic and disinfectant. It is found in the market as a 40 per cent solution. Eight to ten per cent destroys the spores of micro-organisms in ten minutes. A 1 per cent solution destroys cultures within an hour, and disinfects and renders feces odorless. A 3 per cent solution will remove all infection from the hands; and one part in ten thousand prevents the growth of pathogenic micro-organisms.

American Medical and Surgical Bulletin.

GRAINS AND GRAMS.

A report from Paris accentuates the danger that sometimes arises from the confusion between grains and grams. An English tourist who suffered from sleeplessness, and was accustomed to take a mixture containing chloral hydrate, took his prescription to a Parisian pharmacist to be compounded. The dispenser interpreted the symbol "gr." to mean grams instead of grains, and a mixture about fifteen times stronger than prescribed was given to the patient. Fortunately, his wife, becoming alarmed at his prolonged sleep, endeavored to rouse him, and finding her efforts unavailing, she summoned medical assistance, and the patient was with difficulty restored. *Brit. and Colon. Drug.*

ASBESTOS.

There is probably no product of inorganic nature about which there is so much popular mystery and misconception as asbestos. It is vaguely understood that the principal claim of this remarkable product to attention is that it cannot be consumed by fire. There are, however, no less than six varieties of asbestos, each of which possesses qualities peculiar to itself. They may be classified as (1) amianthus, in which the fibers are so exceedingly long, flexible and elastic that they may be woven

into cloth; (2) common asbestos, with the fibers much less flexible. It is heavier than the first variety, a dull green in color, sometimes pearly in lustre, and unctuous to the touch; (3) mountain cork, light enough to float on water; (4) mountain leather, also very light, but thinner and more flexible than the last; (5) mountain paper, or blue asbestos; (6) mountain wood, which in external aspect resembles dry wood. In fact, nearly all varieties have variably the appearance of fossilized wood. Asbestos has been found in nearly all parts of the globe, that of the United States being principally in Virginia, the Carolinas, Texas, New York, New Jersey and Pennsylvania. Canada, however, contains the greatest asbestos region in the world. While the quantity is unlimited, the quality fully meets the most exacting requirements that invention is daily opening up for it.

Montreal Phar. Journal.

The Corborundum Company reports to us that its works have produced during the year 1896, in round numbers, 1,191,000 pounds, or $595\frac{1}{4}$ tons, of crystallin carborundum, says the *Engineering Mining Journal*. Consideration at the present is given to the production in crystallin form only, but another important industry in which carbid of silicon promises usefulness of the material. Some mention has been made of the experiments showing that carborundum can be used, and will, in all probability take the place of ferro-silicon in the manufacture of steel. Prof. Luehrmann, of Germany, recently wrote an article on this subject, indicating that in the use of carborundum there will be in Germany alone, approximately, 2,500 tons consumed annually, provided its cost would not exceed six cents a pound. It may be used for this purpose in an amorphous form, and the Carborundum Company is prepared to furnish it at a price slightly under this figure.

Scientific American.

The daughter of a dentist recently consulted another for the treatment and relief of a fistulous opening under the body of the inferior maxillary, arising originally from an abscess. She asked in all sincerity if he proposed to treat the outside as well as the inside. She frankly said that she expected the dentist to consent that she should continue to have the swelling and pus-forming cavity remain under the ministration of the medico who had been in charge when it broke externally. To those of us who have

had the common experience of the relief afforded by the lancing into such abscesses from the mouth, when they have almost broken through the integument of the face, and the result of this operation, thereby preventing an external and disfiguring scar, it certainly seems strange that a case of this kind could be so dilatorily treated as to permit the calamity to culminate so seriously. A dentist had been originally in charge of the case, and he was represented as having done little but apply some slight palliatives internally, and await the action of the medical man, while the latter had, by the use of poultices, encouraged the pointing of the pus upon the outside of the face. To many this simple class of cases has been a stumbling-block, and not infrequently the delays and the division of the responsibility, together with the hesitation resulting from the dread of error in judgment upon this neutral ground, have worked no little or inconsequential danger.

T. C. Stellwagen, in Cosmos.

COTTON COLLODION STOPPING.—Better than any of the varnishes and of less offensive odor I have found collodion for sealing cavities. After preparing cavity and putting tiny pledget of cotton—with required medicament—pack the cavity with cotton saturated with collodion, after removing surplus. Drying with blow-pipe for a short time, firm pressure with a burnisher will bring a drop of collodion to the surface. A few manipulations with the burnisher will glaze the surface, and I have seen cavities thus stopped remain air- and water-tight for a month. It certainly keeps the cotton hard much longer than any preparation I have used, with the advantage of being antiseptic, if the cotton is properly prepared.

La Salle.

The fellow that struggles most at the beginning of the race will have less at the end. Never fear disadvantages; good discipline and persistency will overcome all obstacles. Pay little attention to the roughness of the way; let this discourage the other fellow. Be thankful that final success requires a long pull, a strong pull, and a struggle all the way, because this will give you less and less competition as you successfully pass incompetents and weaklings. If you mind your own business, and forge ahead, your disadvantages will decrease, and your advantages increase, and your attention will be less attracted by side shows and petty cures. Your field will be clear, your position secure, and your success assured.

Wilhelm Whinter.

PYORRHEA.

Dr. Beach.

There is one fixed fact to be borne in mind; tissues once destroyed by the disease known as pyorrhea are never restored. I do not wish to discourage any enthusiast, and hope something will yet be discovered that will wipe this disease out of existence. I do not think the treatment has yet been found that will make a radical cure of pyorrhea. Ten years ago I made the statement that genuine pyorrhea alveolaris was never cured, and I then offered one thousand dollars to any one who would present one case of pure pyorrhea that two years after treatment was in a healthy condition. I have never known a case to remain healthy for two years. I know of cases where progress has been checked—the patient made comfortable. For ten, fifteen, or twenty years the teeth may be kept in condition more desirable than if there had been no treatment. But there is a vast difference between checking the progress of a disease and eradicating it. I hope to see the day when this can be done with pyorrhea. There is a great difference between pyorrhea alveolaris and the mere presence of calcic deposits on a tooth. We all know that when tartar deposits on the necks of the teeth it exerts a destructive influence on the pericemental membrane, causing resorption of the gums, which may present many of the characteristics of pyorrhea, but, by the removal of the cause of irritation and keeping the teeth in a reasonably cleanly condition, the gum will heal of itself. Pyorrhea is a very different thing from the mere presence of calcic deposits. We may have deposits on the teeth in pyorrhea, but the deposits do not constitute the disease. Dr. Cowardin said that filling teeth does not prevent decay. I would like him to explain whether he refers to the prevention of decay where the tooth has been filled, or in some other locality? *Cosmos.*

CROWNS ON LIVE PULPS.*Dr. G. V. Black.*

I know the habit has been to destroy most pulps in teeth on which crowns or abutments for bridges are placed. Generally, it is the correct practice. In most cases I have done it, myself, but I do not think the pulp of a tooth dies because it is supporting an artificial crown or the abutment for a bridge. I believe a tooth with a living pulp is better and safer in supporting a crown or an abutment for a bridge; I would always prefer to have a

tooth with a live pulp in every position, if I could get with safety to the pulp. But the fact is this: When we have properly prepared a tooth as an abutment for a bridge, or to receive a crown, it is generally so mutilated as to endanger the life of the pulp; for that reason, the pulp should be destroyed. I put on five crowns and six abutments for bridges in one mouth, all of the teeth having living pulps. The original one of these abutments was on a tooth with a dead pulp. After five years the root of the tooth, the pulp of which was dead, was so absorbed that it was broken; then I moved the abutment of a tooth with a living pulp, and it is about five years since, without any complaint. Now, in every case in this mouth every particle of enamel was removed from those teeth that were used as abutments.

When the work was first done the patient was about fifty years old. I have put on bridges over abutments with living pulps in much younger patients. I have also found a good many cases where, after beginning to cut the teeth, I have hesitated and stopped, and applied arsenic and destroyed the pulp, because I found I would cut into the dentin considerably, and had found great sensitiveness. I would do this precisely as I would do in filling. If I have a very large area of dentin exposed, and a tooth hypersensitive to a great degree, perhaps I would devitalize it before I proceed to prepare for the filling. The conditions I would deem such as to endanger the pulp. I would do precisely the same in preparing abutments for bridges or crowns, not that the covering of the tooth necessarily destroys the vitality of the pulp, but the mutilation of the tooth in the preparation destroys the vitality of the pulp, or brings about conditions such that the pulp will die. We should exercise care and judgment. We cannot mutilate teeth in every mouth and have the pulp live. In other mouths we may do so to some extent. Generally the tooth is so decayed that it is necessary to remove the pulp. I have capped quite a number of pulps, and put shell crowns on the teeth. I have never had a single one of the pulps die, so far as my knowledge of them goes. I have done it, however, only when I felt safe, just as I would do in capping pulps under filling, using precisely the same principles, the same judgment in one as in the other. For years I have had more pulps die under fillings where the pulps were not exposed, than in which I have capped exposed pulps, perhaps because I have risked more where the pulps were not exposed than I would be willing to risk in capping. We should observe these cases carefully, study the conditions, and if the mutilation of the tooth in preparation be

such as to endanger seriously the pulp, we should destroy the pulp. But if the conditions are favorable for the continued health of the pulp, we should consider that the tooth is stronger, better, and the conditions more favorable for long usefulness; if the pulp is alive, we should try and save it where our judgment dictates that we can do so safely. *Western.*

CROWNS ON LIVE PULPS.

Dr. C. S. Chase.

Relative to the removal of the enamel entirely for the purpose of banding the roots of the teeth, I believe is proper practice and the only way by which one can succeed in getting perfect adaptation or a perfect joint between the border of the band and root that will prevent future inflammation. Relative to the influence of crowns covering living pulps: If the crowns of natural teeth were bell-shaped, as has been spoken of here to-night, and it was absolutely necessary to remove the enamel in order to fit mechanically perfect an artificial crown to a natural crown that would withstand the wear and tear of use, then it would be a different question; but it happens to be a fact that natural crowns are not bell-shaped, taking the circumference of the crown from the occlusal portion to the gingival margin. I happen to know, for in my practice I crowd on to natural teeth from one to fifteen or twenty bands daily. I know how closely the bands fit when they were started on to the crown, and that they continue to crowd on harder and harder, till they nearly, and oftentimes quite, reach the gingival margin; then the constriction commences. If you are going to carry the border of the shell crown below the margin of the gum, I say by all means devitalize those teeth, because to get a perfect fit beyond the border of the gum you must take away nearly, if not quite, all of the enamel. But there is another way of fitting hollow gold crowns on teeth, by which they do good service, and I have fitted many of them, and that is by carrying the border not under the gum, nor to the gum, but leaving the space between the margins of the gum and the border of the crown that may be kept thoroughly clean, and at that point is really the largest circumference of teeth. This reference to the use of shell crowns applies only to the posterior teeth, that may be required for bridge abutments and otherwise, when nearly all the natural crown is intact. I have crowned teeth for many patients where the borders of the bands have been carried not quite to the margin of the gum, covering

the natural crowns entirely, without any of the enamel having been removed, with the exception of a slight portion at the mesial and distal surfaces, so as to decrease the occlusal diameter, that the band or crown could be more easily adjusted. It would not surprise me if I had hundreds of those cases in my earlier practice, and the teeth have remained alive in most instances. But had I removed all the enamel to crowd the crown beyond the border of the gum, I believe nine times out of ten the influence of the band, the cement, etc., would have destroyed ultimately the pulps of the teeth.

Western.

Absolute alcohol for softened and sensitive dentin, and for drying cavities, may be prepared as follows: Add one part of potassium carbonate to four parts of the ordinary, or officinal alcohol. Owing to the great affinity carbonate of potassium has for water, it abstracts the latter to a sufficient degree to answer all practical purposes.

British Journal.

THE NATIONAL DENTAL ASSOCIATION.

The next annual meeting of the National Dental Association will be held in Omaha, commencing on Tuesday, the 30th day of August, 1898.

Attention is called to the fact that all who were members of the American Dental Association and of the Southern Dental Association at the time of the formation of the National Dental Association, are now members of the latter organization.

The Constitution, Article III, Section 5, provides as follows:

"It is hereby specially provided that all persons at present permanent members of the American Dental Association and of the Southern Dental Association, are permanent members of this Association, and entitled to all the privileges of the class to which they belonged, without further action, and the Treasurer is hereby directed to transcribe their names upon the roll of membership of this Association."

The officers of the National Dental Association will leave nothing undone to make the meeting at Omaha a success, and they hope the attendance and interest in the first active annual meeting of the Association will be commensurate with its importance.

By order of

Thomas Fillebrown, President.

Emma Eames Chase, Cor. Secretary.

PRACTICAL POINTS.

By Mrs. J. M. Walker, Bay St. Louis, Mississippi.

An Antiseptic Pulp-Capping Material.—For filling over a traumatically exposed pulp, mix one-third hydronaphthol powder with two-thirds any good cement powder; mix as usual with any cement. If there is any pericemental inflammation treat with pure beechwood creosote until the inflammation subsides, before filling as above.

L. G. Noel, St. Augustine Meeting.

For Perspiring Hands.—Borax and salicylic acid, of each fifteen parts; boric acid, five parts; glycerin and proof spirit, of each sixty parts. Apply with rubbing, three times daily.

Les Nouveaux Remèdes

Vibration of Electric Plugger Points.—The vibration of the points used in the electric plugger which necessitates the use of the thumb of the left hand to support and steady the instrument, may be entirely overcome by using the very short points made for the Bosworth automatic mallet.

W. E. Walker, St. Augustine Meeting.

A Hint in Nomenclature.—In Trans. "Manchester Odontological Society" we read "the left first maxillary molar," "the first right and left mandibular molars." Why not? There is nothing either superior or inferior among the teeth because they happen to be placed in the upper or the lower jaw. *J. M. W.*

The Best Styptic.—What is the best styptic? HOT WATER. Keep it up and you will surely conquer. Look at the washer-woman's hands after a day's work in the tub of hot water; note how pale and bloodless, shriveled and shrunken they are and learn a lesson.

J. Y. Crawford, St. Augustine Meeting.

Treatment of Chronic Alveolar Abscess.—The contents of the root-canal should first be thoroughly and completely removed, and by means of catephoric medication the apical space sterilized, and the end of the root hermetically sealed. Then saturate the dentinal tubuli with some germicidal agent and fill the root-canal. Eradicate the remaining portion of the diseased tissues by surgical interference through an opening in the gum over the root. When this has been effectively accomplished, there will be no question as to the radical cure of the abscess.

M. L. Rhein, International Den. Jour.

Opening Up a Dead Tooth.—When we drill into a dead root we are liable to stir up a hornet's nest. This is because the spores, or other effects of the former decomposition, have not been fully removed, and when the drill lets in air to these bacteria they are waked up and restored to a state of activity.

F. W. Sage, Dental Register.

A Use for Pyrozone.—In the removal of a putrescent pulp, I first apply a 5 per cent solution of pyrozone, which at once disinfects, permitting the removal from the canal of disorganized tissue without the disagreeable odor, so offensive to both patient and operator.

Dr. Wittlander, Dental Practitioner.

A Special Point in Root-canal Filling.—Having thoroughly dried the canal ready for filling, moisten slightly with oil of cajeput, following with only enough chloro-percha to slightly moisten the inner walls of dentin. Then pass gutta-percha cones into canal with pliers, softening with a few blasts of hot air from syringe. The gutta-percha used in this way will not adhere to plugger points and be drawn out of the canal again.

H. A. Peck (Clinic), Dental Review.

A Cement for Mending Broken Plaster Casts.—Dissolve sheet celluloid in ether, making a thick creamy paste. Coat the broken surface thickly and hold together for a few moments, then allowing it to harden not less than three minutes before handling.

Dental Weekly.

Protection of Nearly Exposed Pulp.—Remove as much of the decalcified dentin as is deemed allowable from our knowledge of the position of the pulp. Saturate the dentin remaining with an antacid, dry and flood with oil of cloves, cassia or campho-phenique, driving into the dentin with blasts of hot air. This serves as disinfectant and has a very soothing effect upon the pulp. Then cover the vicinity of the pulp with gutta-percha or other non-conducting material, retained in place with rubber varnish previously applied, in such manner as to prevent pressure from filling. Fill with a combination of phosphate of zinc and gold or amalgam.

A. W. Chance, Pacific Gazette.

Hypersensitive Dentin.—The application of 1-10 grain citrate of cocain will yield gratifying results. *Dental News.*

Pulp Devitalizing Paste.—As much as will lie on the end of the small blade of a penknife of the acetate of morphia, pow-

dered hydrochl., cocain, and powdered arsenic. Mix on a glass slab with a spatula and incorporate with carbolic acid to make a paste. The nerve is killed by this application as painlessly as an infant dropping to sleep, and this in twenty-four hours.

T. F. Chupein, Den. Office and Laboratory.

Root-canal Filling.—My method of filling root-canals is with common lime, mixed with water to a pasty condition, with enough carbolic acid and iodoform to give it antiseptic and disinfecting qualities. I have used this for three years and find it very satisfactory.

W. D. Snyder, Ohio Den. Jour.

To Polish and Restore Aluminum.—Gray or unsightly aluminum may be restored to its white color by washing with a mixture of 40 grams borax dissolved in 1000 grams water, with a few drops of ammonia added.

Pacific M. D. Gazette.

A Help in Packing a Case.—There is nothing better than a solution of rubber in chloroform, applied to the model, for making the pieces of rubber stay where they are placed. With this aid, the packing can be done almost as perfectly as with wax.

Am. Dental Weekly.

Clasps in Partial Plates.—Very, very rarely does a properly-fitted and a properly-finished clasp cause loss of enamel through mechanical abrasion.

Keep clasps from close contact with any dental tissue except smooth enamel; make them broad enough to grasp all the enamel surface of the tooth (where not in view). Usually when teeth are worn by the pressure of clasps, the cementum has been embraced—not the enamel alone.

H. H. Burchard, Dental Cosmos.

Pyorrhea Mouth-wash.—

R.—Black's 1-2 3.....	℥j
Alcohol	℥iij
Glycerin	℥ss.

Use one dram in glass of water as mouth-wash and for forcible injection with syringe during removal of deposits, to wash away powder and debris, coagulated blood, etc.

I. A. Freeman, Dental Review.

Treatment of Instrument Wounds.—Encourage bleeding, and then touch the spot with strong acetic acid. It burns rather smartly for a few moments, but the resulting scab will be soft and pliable and not easily torn off. Never cover such a wound with collodion before disinfecting, and do not neglect precautions in any case, no matter how far beyond reproach may be the moral character of your patient.

Pacific Medical Record.

Disinfection of the Mouth.—Montefusco's experiments show that simply cleansing the buccal cavity with a brush sterilized by boiling, and washing with sterilized water continued for fifteen minutes, suffice to free the mouth from micro-organisms.

Boric acid, benzoate of soda, and chlorate of potash were found almost without action. He deems mouth-washings with the essential oils of special prophylactic value in diphtheria and pneumonia.

Dental Register.

Amalgam and Gold.—For large posterior cavities, prepare the cavity with the care necessary for an all-gold filling. Fill half or two-thirds full of a good amalgam, and as dry as it will work well, using as little mercury as possible; immediately add Watt's crystal gold which will amalgamate with and become part of the amalgam filling. After all the mercury is taken up, finish with cohesive gold. The weak points of both gold and amalgam are overcome, and the best results from both obtained.

C. H. West, Dental Review.

Removal of Green Stains.—I use the three per cent pyrozone. Apply it with an atomizer, spraying the teeth. It is efficient and pleasant, both to patient and operator.

C. E. Wittlaufer, Dental Practitioner.

Pulp Removal and Root-canal Filling.—Remove the pulp by means of Donaldson broach, apply rubber-dam, twist shred of cotton around a fine broach, dip into a 50 per cent solution peroxid sodium, and thoroughly cleanse the canal by repeated applications. Wash out canal with alcohol, using hypodermic syringe, dry with hot air and Evans' root dryer. Fill canal with salol and about 5 per cent either iodoform or thymol, the latter I believe to be the best. Melt the preparation, heat a minute quantity of cotton wool and dip into the melted compound and carry quickly up the canal to the apex. Fill canal by injecting with the compound, using a hot hypodermic syringe. Wait a few moments to allow the salol to set, wipe away surplus, line cavity with thin cement, and while it is soft fill with either gold or amalgam.

C. A. Firthe, Dental Cosmos.

Moisture-tight Gutta-percha Fillings.—Dry the cavity well; place in it a pellet of cotton saturated with absolute alcohol. Remove cotton and varnish the cavity with a solution of common resin in chloroform. Warm the gutta-percha and pack with cold instruments, paring off surplus. Polish with oil of cajeput.

J. G. Templeton, Dental Review.

ITEMS.

To remove the stain of tincture of iodine, from either the hands or napkins, apply strong ammonia. The stain of nitrate of silver, on either the hands or napkins, can be easily removed by covering the spot with tincture of iodine, wait a few moments, then apply strong ammonia and rub well. *British Journal.*

The dental engine is used too much. I can make an undercut in a sensitive tooth with less pain with a sharp hoe-shaped excavator than with the engine, however sharp or small the bur; never reverse the motion however. I use the force in one direction till finished. *Dr. Lowry.*

To keep water warm for use at the chair at all times, a small bracket may be made, large enough to hold a wine glass filled with water, and fastened to the wall at any convenient place.

Under this, on another bracket, place a small kerosene lamp, which will keep water warm at a cost of about one-eighth of a cent per day. *F. H. Hood, in Ohio Journal.*

℞—Cocain.....	gr. iv.
Carbolic (crystal)	gtt. v.
Aqua (crystal or dis.).....	3j. M.

Inject in gum on each side of tooth till gum turns white, wait one minute and then extract. *O. E. Tibbetts.*

The beak of the mosquito is simply a tool-box wherein the mosquito keeps six miniature surgical instruments in perfect working order. Two of these instruments are exact counterparts of the surgeon's lance. One is a spear with a double-barbed head, the fourth is a needle of exquisite fineness, a saw and a pump going to make up the complement.

Ram's Horn.

I have found by taking ordinary vulcanized rubber and making a solution of it in chloroform and covering that portion of the plate to which I intend to make the attachment, it would prevent the rubber from pulling away from the plate at the margin—the grinning, as I have called it sometimes, we frequently see in plates of this kind. This has been more successful in my hands than any other method I have tried. *S. F. Duncan.*

A pledget of cotton dipped in a saturated solution of camphor in chloroform, placed for a few moments in the socket, will almost instantly afford relief after extraction. Remove as soon as pain ceases.

D. W. Baker.

COMPLETE REMOVAL OF THE STOMACH.—It would seem that the stomach is not a necessary part of our economy, for there is a successful instance on record, in which Professor Maydl removed the whole stomach from a man. A little over an inch at the cardiac end was left, and this was united to the duodenum. Not only did the patient make a perfect recovery, but he was well many years later, and able to digest better than ever before in his life. It is stated that he was living on the roughest of country fare. In Czerny's well-known experiments on dogs, the duodenum dilated and took on the functions of the excised stomach, and the same probably occurred in the cases recorded in man.

British Journal.

From whom do we get the choicest literary productions that are appearing in the dental journals of our country if not from the young graduates of our dental colleges in the United States? If we look at the array of literature which appears in our dental journals, and the work that is done in our dental societies, we will find that among the best men in the dental profession, the men who are advancing it, are the recent graduates of our dental institutions.

T. W. Brophy, in Review.

A very curious instance of the intimacy between the functions of the brain and the remotest parts of the body may be observed by those who have anything to do with the inmates of lunatic asylums. It is that which concerns the thumb and the brain; in fact, it is said that there is one infallible sign of insanity. Let a person speak ever so rationally and act ever so sanely, if his or her thumbs remain inactive, there is no doubt of insanity. Lunatics seldom make use of their thumbs when writing, drawing, or saluting.

Health.

While the dental institutions of this country are graduating many students, and it would seem as though the profession would be overcrowded, yet I believe not over 20 per cent of the people employ dentists for the purpose of preserving their teeth, and consequently the young graduate need have no fear that his services will not be required by those among the millions of people in this country who have no dentists, and who do not know the value of dentistry.

T. W. Brophy, in Review.

ANCIENT EGYPTIAN TEETH.—In the very ancient skulls of Egyptian mummies the teeth are generally found greatly worn on their masticating surfaces. This, together with the absence of decay, evidences that the possessors must have lived on food that required much mastication.

Some months since three dentists were called on to give an opinion as to the treatment of a dead tooth for a persistent and severe irritation at its root. The result was a delay of action and retention of the tooth, though one dentist urged its extraction and an explorative opening of the bone as most likely to lead to the location and removal of a probable addition to the trouble, if not of the sole exciting cause. A year was allowed to elapse, and during that time sarcomatous growth had so involved the bone as to demand the removal of nearly the entire superior maxilla.

T. C. Stellwagen.

A good prosthetic dentist must not only be a mechanic, but an artist of the highest degree, as well as a thorough anatomist; especially must he know the muscles surrounding the mouth and their various functions. It requires more skill to construct a good artificial denture than it does to make a bridge or crown, or to insert a filling of any sort. A dentist must have a greater diversity of qualifications to be successful in plate work than in most any other branch of mechanical dentistry, or of dentistry of any kind.

Dr. Lowry.

CURIOUS EFFECTS OF BRAIN LOSS.—The skill of modern surgery was demonstrated in the case of Leo Seigfried, who is in the Missouri Pacific Hospital, at Kansas City. A fortnight ago his skull was crushed while he was acting as brakeman on a Missouri Pacific train. After he was removed to the Missouri Pacific Hospital it was thought he could live only a few hours.

Drs. Hammill and King, of the hospital staff, began operating on him the morning after the accident. A little more than six square inches of the skull were removed and several ounces of the brain tissue taken out. The patient had naturally a rugged physique, and his great vitality came to his aid. He is able to talk, and, the nurses say, will soon be out.

The effect of removing the brain tissue is shown in Seigfried's disjointed speech. He forgets many words, phrases and names, but not locations. The sequence of thought with him seems to have been broken as regards every event after the accident. Everything before that time he remembers distinctly.

St. Louis Globe-Democrat.

Do we ever think how repulsive it must be to some patients to have a mouth-mirror, which has been removed from another patient's mouth and not cleansed, thrust into their mouth? Always cleanse the mirror in the presence of the patient. Most patients are too polite to say anything, but they may think all the more.

British Journal.

THE PLATE THAT DID NOT FIT.—Dr. Percy Green, in an amusing article on reminiscences, relates the following:

"While working at the chair one afternoon, a man, for whom I had made a plate, opened the door and in a very audible voice notified me that 'that plate didn't fit.' As my patient in the chair was quite a prominent lady of the town, I of course didn't want her to get the impression that my plates were failures, so I quietly answered him that perhaps the suction wasn't just right. 'Maybe that's it,' he replied, 'but if I was in your place, I'd learn 'em to suck before I sent 'em out.' It is needless to say I have tried to profit by his homely, yet excellent advice." *British Journal.*

MILITARY DENTIST.—Among appointments not usual in French regiments is that of a regular dentist. The difficulty for the immediate present has been got over in brilliant fashion by the medical officer attached to a battalion. Among the reserve men fulfilling their "twenty-eight" days' service was a well-known Parisian dentist. The doctor had him relieved from his ordinary duties and set him to work to attend to the teeth of all the men under his care. The dentist has done his task in thorough, workmanlike style, and keen regret is being expressed among the privates that his time will soon be up. It is a pity he is not retained permanently.

British Journal.

PRIZES FOR DENTAL STUDENTS.—Mr. Thomas Fletcher, of Warrington, has announced that, as the prizes in his name at the Manchester school had been for many years so successful in raising the standard of work, he had arranged for a prize fund of £20 per annum at both the Liverpool and Manchester schools annually to the year 1906. Messrs. C. Ash & Sons offered at once to practically increase these by supplying at a low price instruments or tools in exchange for this, thereby increasing the practical value of the prizes largely. Where does poor London come in? She is already behind Liverpool and Manchester as regards university teaching, and now further advantages are being showered on the Northern capitals. *British Journal.*

EDITORIAL.

A COLLEGE EDUCATION.

A collegiate education is desirable; but some of our best workmen, closest thinkers and most practical and useful and successful men never saw a college. Education is disciplin. All opportunities without this are futile. The faculties must be cultured as well as stored; knowledge must be digested as well as received. The native powers must be expanded, refined and matured, and nothing but severe disciplin, exhaustive struggle and incessant mental labor can accomplish it. We may know all the college can teach us and be fools; and we may be ignorant of many things taught there and be wise. By all means learn all you can from all sources, and if you can go through a thorough course at college so much the better. But right where you are, surrounded as you are, and with all your hindrances and limitations, you can learn much and prepare to learn more, if you wisely occupy your time. Do your best just where providence has placed you, and you will do better by every advantage that may come to you.

"The learned blacksmith" was obliged to work constantly at the anvil, but he had his lesson near by to memorize, or his problem to solve, or his question in science to answer. Not a day passed that he was not the wiser, till he had mastered twelve languages, studied through the whole series of mathematics, and become familiar with all sciences.

If you have chosen a line of work, let nothing deter you from pursuing it, and becoming thorough in it, even if you have to exclude many things you would like to know. Let it absorb your whole nature, take your whole time, and necessitate your being a man of one idea. By and by, when you have well entrenched yourself, made good your foundation and superstructure, and strengthened yourself till you are master of your situation, you can indulge in side shows. There is nothing like being

able to do something well, so well that you will be of special value to the world, so valuable you can command ample compensation.

This is the education of skill and tact and practical usefulness. It is always in command. The education that gives us mere theories, though those theories may make us philosophers, will leave us on stilts. We are above the practical world; and the world can never use us nor appreciate us.

Let us remember, it is not the most work we do that gives us success; it is the best work, and that which gives our patrons the best satisfaction. It is a nice thing to have a little more than we can do—not to hurry us the more, but to give us the choice of the best and most profitable that comes. If we become popular by doing superior work, we shall be sure to have a neighboring dentist, who will be glad to have little jobs we cannot well attend to, and he will be proud to know we sent them, though they are not the cream of our business—only the skim milk. Then, too, by having a well-earned reputation for being skilful, we can gradually increase our prices. Ah, this is the kind of practice to covet, and most of us may have it by intelligently and laboriously working up to it.

If there is anything to which I owe a measure of success, it is promptness—having a definite order of work and living up to it with punctuality and system; never leaving for to-morrow what should be done to-day, or delaying for a more convenient season what should be done now. This allowing an accumulation of work, when it can be taken up singly and disposed of, each in its proper time, begets procrastination, shiftlessness and confusion. I like to see the bench clear and clean, ready for something new, and my time ready for any exigency. It makes me feel master of the situation, instead of a servant crowded and burdened with overwork; and it leaves me with time and disposition for leisure, study and general improvement.

JUMPING INTO A FORTUNE.

Some men jump so high they hurt themselves. Even if they reach the elevation of their ambition, without a sprain or a strain, they become giddy and fall. There is nothing like knowing what you can do; and sometimes it is quite as necessary to know what you cannot do. Some men have no business in high places, and it is their own fault if they get hurt by being there. There is nothing like knowing where you belong, and in not assuming to be what you are not. Even in trying to better your condition it is the part of prudence and caution and wisdom to use good common sense.

I pity a young man that jumps even into his father's boots, unless they fit him pretty well. I know most any of us would try, though we had to pull hard at the boot-straps, and our feet cramped after we had got in—if the boots were worth getting into. But I have seen many who have tried it who would give all their old shoes if they could jump back again. To be valuable, boots must fit, however fine the material. Some have the skill of adapting to their feet even an uncle's shoes; but usually those shoes fit us best that are made to our own measure.

We can generally tell if a young man has jumped into a fortune or into his business; for he is sure to look and act out of place, and much more likely to lose it than if he grows into it.



The thoughtful man is not so often heard and seen as the puppets that play on the stage to the dance of the intelligence of others. They seem to be really alive, and to speak and act of themselves. But this is only a seeming. Their bobbing up and down on the stage of our conventions are only the reflections thrown on them by the wisdom or follies of others. As a diversion between real acts it would not be so bad, if they knew when to stop their antics, that there might be a little time for the main actors to show themselves.

KERNELS.

The newly-discovered chemical substance, sugarine, or benzol-sulfinid, is likely to have an important influence on commerce in several directions.

Unlike saccharine, which never became very popular, sugarine contains none of the obnoxious para acid. It is a chemically pure substance, 600 times as sweet as sugar, and yet obtainable at one-twelfth the cost.

According to Miremond, five to ten grams of red precipitate ointment, applied with friction for one or two minutes around the surface of a carbuncle, causes immediate amelioration and resolution within two or three days without suppuration.

Professor Olmstead, of Yale College, recommends rosin melted with six or eight parts of lard as the best protection for iron or steel instruments, or implements of any kind.

Dr. A.T. Usher, in *Cosmos*, says a saturated solution of borax is better than the powder. He simply adds a superabundance of borax to the water and boils it till the water will take up no more.

When the temperature of the air is 50 degrees Fahrenheit, the temperature on the coat worn by a man is 71.2, that between the coat and vest, 73.6; between vest and shirt, 75.9; between shirt and undershirt, 77.4, and between the woolen undershirt and the skin, 90.9.

The Sandwich Islanders estimate women by their weight. The Chinese require them to have deformed feet and black teeth. A girl must be tattooed sky-blue and wear a nose-ring to satisfy a South Sea Islander. African princes require their brides to have their teeth filed like those of a saw.

The most ponderous animals, fishes and birds have been gradually disappearing for thousands of years. We are reminded of this by seeing a skeleton of a shark that must have lived in the prehistoric past. The length of the animal when living must have been fully seventy feet. The teeth were five inches long and very powerful. It is rare to find a living shark now more than eight or ten feet long, with teeth two inches.

An ostrich's egg weighs about four pounds—equal to forty hen's eggs.

Grapes are almost as good as quinin for malaria troubles; and pineapple is a cure for sore throat.

There is no sphere of life so narrow or confined that it does not afford opportunities for doing good to some one.

Campho-phenique, confined under a temporary filling for a few days, is a valuable application for sensitive dentin.

At Tangent, Ore., a steam plow has been devised which the inventor thinks will plow fifteen acres a day.

"As blind as a mole" is not a sensible comparison, as the mole is possessed of good eyesight, though its eyes are very small—about the size of a mustard seed.

The age of whales is ascertained by size and number of laminæ of the whalebone, which increases yearly. Ages of 300 and 400 years have been assigned to whales from these indications.

The smallest horse in the world is a Shetland pony owned by the Marchese Carcano, in Milan. It is twenty-four inches high, and when standing besides its owner the pony's back is only an inch above his knee.

A dull, stupid, dreamy manner, and a coarse, morose, sour countenance are repulsive, and show an addled head and a cold nature. Such people get on slowly and are in little demand. But a bright, active, prompt demeanor and a cheerful, open, intelligent countenance show crisp, sharp, mature thoughts and a ready, exact, practical skill which are a passport to the best society and to the most pleasant and profitable positions.

George W. Arberry, a motorman, of Montgomery, Ala., fell ill of the yellow fever and, it was thought, died. The body was put into a box, which two negroes undertook to cart away and bury on a hill. The mule team ran away and the box was overturned and broken. When the negroes tried to fix things up Arberry came back to consciousness and yelled to know what was being done to him, which caused the negroes to flee as fast as their legs would carry them. Arberry managed to crawl to the nearest house, and, although nearly dead from exposure, he recovered eventually.

A good deed is never lost; he who sows courtesy reaps friendship, and he who plants kindness gathers love.

Any of the non-cohesive foils, with one exception, which is not a pure gold foil, can be made cohesive by continued annealing, and all of the cohesive foils, without exception, can be made non-cohesive by exposing them to the fumes of ammonia.

The simplest thoughts reach and touch the hearts of men. From the dullest pigments artists have painted their most brilliant masterpieces. The meanest materials are used in the construction of great edifices. Therefore, do not scorn humble objects.

In recent years the deaths have exceeded the births in France, and the statistics for 1896, just published, brings great comfort to Frenchmen. The births in the year named exceed the deaths by 94,000, but even with this increase the birth rate is only 22.7 per 1,000, the smallest of any civilized nation.

The editor of the Murfreesborough (Tenn.) *News* thus accounts for hard times: "We let our timber rot and buy fencing. We throw away our ashes and grease and buy soap; we raise dogs and buy hogs; we raise weeds and buy vegetables; we catch five-cent fish with \$4 rods; we build school-houses and send our children off to be educated, and, lastly, we send our boys out with a \$40 gun and a \$10 dog to hunt ten-cent birds."

Before filling a sensitive cavity, cover the foundation and walls with cement to prevent sensitiveness to heat and cold. It may be still better to fill the whole cavity up nearly to the margin with it. If it is very sensitive, this cement may be a positive injury, causing acute pain for some time. This may be avoided by first varnishing it with gum benzoin cut in ether. Sometimes it is well to cover the foundation and sensitive portions with the zinc powder made into a paste with oil of cloves and creosote.

The mosquito has prevented or hindered the settlement of 10,000,000 to 11,000,000 square miles of fruitful territories. In a "mosquito map of the world," *Popular Science News* shows the distribution of this enormous insect reservation, which is almost uninhabitable by man, and comprises the whole of Western Africa from the great desert to Fish river, half the Sunda Islands, all the vast tundras of Northern Siberia, much of British North America, lowlands in the United States, Eastern Mexico, Guatemala and Honduras, with about two-thirds of South America.

FOR OUR PATIENTS.

NO ROOM BUT FOR ONE AT THE TOP OF THE LADDER.

I.

Really what more could a poor mortal ask?
Earth had been given with planet and star;
Heaven was tendered, in its sunlight to bask;
Glory and honors were brought from afar.

II.

To have him feel that much had been done,
And was cast at their feet for the good of the whole,
They unselfishly granted him that he had won,
And lavished attention for the rest of his soul.

III.

Before in his flight, he had left this cold earth,
To warn and remind him that toils were not vain,
And have others feel sure that no matter his birth,
He'll find the top rung can't be reached without strain.

IV.

While the way is dark and the ladder is high,
And the topmost rung has narrowed so fine
Where but one can stand and no other is nigh,
Does it pay to reach up and on it recline?

V.

Lonesome and sad will it not now appear
To be the bright target upon this high spot,
And have no companion by your side to cheer
While malice and envy will hurl all their rot?

VI.

Oh! what is life worth after such a fierce fight?
Ambition has leaped over every foe;
You are now on a pinnacle far out of sight;
In your flight you let fall your lance and bow.

VII.

Compelled to stand still, you dare not turn
To right or the left, or look down for a round.
You may live on forever and need not the urn,
Yet a step falsely taken you will go with a bound.

VIII.

To the earth from whence you made the chase,
Where there is still room for you on the ground floor,
With the others who were at the start in the race,
All! all will be lost and the cry, never more!

IX.

Will wail out upon you in deafening tones,
"I told you there was room at the ladder's top,"
You reached it and found you stood all alone,
Not even a friend to give you a prop.

X.

The adage, "There's room at the top of the ladder,"
You learned was not true, but that only one
Could get on that rung without being the sadder,
And find after all there was nothing won.

XI.

At the foot of the ladder there is space,
And all who would struggle for fame
Must ever start up from the base,
Or he never can have a fair name.

XII.

One by one, in this struggle of life,
Drop off as upward you pass,
It is forever one bitter strife;
Does it pay? you will say, alas.

XIII.

Yes, it does pay when the work is done,
To help others who are weaker than you,
To find yourself at the top all alone,
It is sweet and noble for others to do.

A NEW DEPARTURE IN GLASSMAKING.—Molten glass has long been moulded into a great variety of ware, but the blow-pipe driven by air from a man's lungs has been deemed indispensable for shaping jars and other hollow articles, as well as window glass. A recent invention bids fair to deprive the glass-blower of his vocation, just as many time-honored craftsmen in the iron trade have found their occupations gone. The first use of the new glassmaking machines is in the manufacture of fruit jars at Muncie, Indiana. One blowing machine is said to do away with the services of three men, and it is estimated that the same product can be turned out with only two-thirds as many workmen employed. The introduction of these machines in glass-making is regarded as fully as revolutionary in that trade as was the introduction of the Bessemer converter and the open hearth furnace in the iron trade, or the typesetting machine, self-binding harvester, etc., in their respective fields. *Railway Reporter.*

DOSING EXTRAORDINARY.

When Chunee, the celebrated Indian elephant, fell sick, it was decided he was suffering from constipation, and after thirty-two hours of coaxing he was induced to swallow the first dose, which consisted of 24 pounds of salts, 24 pounds of treacle, 6 drams of calomel, $1\frac{1}{2}$ drams of tartar emetic, 6 ounces of powdered gamboge and a bottle of croton oil. This produced no more appreciable effect than an ordinary bun would have done. Six pounds of marrow beef, with 4 drams of calomel, was then administered, but absolutely without result, and Chunee became so violent that it was decided to destroy him. But all attempts to get him to take the dose consisting of 40 drams of arsenic, with $\frac{1}{2}$ dram of corrosive sublimate and a lot of strichnin, were unavailing, and the aid of expert marksmen, and finally of the military, had to be called before he could be disposed of. It took 260 rifle balls to kill him, and behold! at the autopsy it was discovered that Chunee had been driven mad with a toothache. One of his enormous tusks was extensively decayed, and the diseased tooth is preserved with the skeleton of the beast at the South Kensington Museum.

The Dental Headlight.

One of the most extraordinary and unaccountable experiences in medicine is the immunity secured by a single attack of a communicable disease against future attacks of the same malady. Small-pox, typhoid or scarlatina, for example, are found, as a general rule, to occur only once in a lifetime of the individual, the successful passage through the disorder apparently rendering the body invulnerable. Reasoning from analogy, I have ventured to express the opinion that the rarity of second attacks of communicable disease was due to the removal from the system, by the first parasitic crop, of some ingredient necessary to the growth and propagation of the parasite.

Prof. Tindall.

She.—“What superb teeth she has!”

He.—“Yes, but they are false.”

She.—“Why do you think so?”

He.—“She told my sister she inherited them from her mother.”

SUPERSTITION VERSUS SCIENCE.—A good story is told of the celebrated surgeon, Prof. Ricord, of Paris. When fresh from college, he went to a little town near Orleans to practice medicin. There lived there, with great reputation, a bone-setter, professing to cure all the ills of humanity; no doctor had ever attempted to supplant him. Soon after the young doctor settled there, close by the bone-setter, he found out that his diplomas were of little use in competition with his rival. One day he was called to see the blacksmith, who was very ill. After a proper examination he prescribed for him according to the rules of his art, and said that he would return the following day. That same evening, however, the bone-setter stepped in and told the patient that if he took what had been ordered for him he would be dead before the moon set a second time. Needless to say, the bottles were thrown out, and the charms of the medicin man substituted. The blacksmith got well. Exposed to constant affronts and a thousand and one annoyances, the unfortunate doctor determined to abandon the struggle, and returned to Paris with only a few shillings in his pocket. But in the city he did better, for he died a few years ago, leaving a colossal fortune, a brilliant renown, and a celebrated name, and a statue has been erected to him opposite the hospital where he worked the greater part of his life in the interest of humanity and science. *British Journal.*

HER PERPLEXITY.—There is a little girl living out on Tilden avenue who is rapidly causing her father's hair to assume the color of the driven snow.

The other day she looked up at him from between his knees, and asked:

"Papa, was it a wise person who said 'the good die young?'"

"Yes," said the musing man, "I guess so."

"Well," she went on, after thinking it over for some time, "I'm not so much surprised about you; but I don't see how mamma ever managed to get growed up."

Cleveland Leader.

"Mister," said the small boy to the chemist, "give me another bottle o' them pills you sold father day before yesterday."

"Are they doing him good?" asked the chemist, looking pleased.

"I d'no whether they're doin' father any good or not, bu' they're doing me good. They just fit my new air-gun." *Ex.*

BRIEFS.

We cannot conquer fate and necessity, but we can yield to them in such a way as to be greater than if we could.

Hannah More.

To love the public, to study universal good, and to promote the interest of the whole world, as far as lies within our power, is the height of goodness, and makes the temper which we call divine.

Shaftesbury.

Hot milk is a nutritious beverage—a real luxury, the value of which but few people know. Many who have abundance of milk never think of using it as a drink—a drink, did we say? That's a mistake. We should eat milk instead of drinking. That is, take it in small sips. Why? Because the casein of milk, when it comes in contact with the acid of the gastric fluid, coagulates and forms curd, and if swallowed in large quantities at once a large curd is formed, which the stomach handles with difficulty. The gastric fluid can mingle much more readily with the small curds that result from sipping the milk.

Family Doctor.

THE QUEST OF FORTUNE.—“The longer I live the more firmly I am convinced,” says Mr. Gozzleton, “that a man who wants a fortune must do something besides wish for it. Fortunes, large and small, are shy, very shy. In some form they are passing by all the time, but they won't stop for the mere asking, however polite and graceful and earnest the invitation may be. We might sit out on the veranda from now till doomsday and rise and bow and scrape at every one of 'em that come along, and ask 'em all in, but never one of 'em would stop. They might want to come in, but nothing short of actual collaring would bring 'em in. The fact is if we want a fortune we must work for it.

“Men have made fortunes, to be sure, without working. Oil may spout up out of the ground and cover the fortunate owner with riches. Another man may find iron ore in his land, and so on. But such instances are so few they don't count. The chances of our getting rich in that way are really not worth considering. If we would be rich we must work for it, and work intelligently; and work early and late; all the time. Plug at it, and keep plugging at it. There is practically no other way.

"The man who idles away his time, or fails to make the best possible use of it, stays poor; the man that works for all he knows how and keeps forever at it is bound to get ahead."

ENDURE HARDSHIP.—As a gladiator trains the body so must we train the mind to self-sacrifice, "to endure all things," to meet and overcome difficulty and danger. We must take the rough and thorny roads as well as the smooth and pleasant; and a portion at least of our daily duty must be hard and disagreeable; for the mind cannot be kept strong and healthy in perpetual sunshine only, and the most dangerous of all states is that of constantly recurring pleasure, ease and prosperity. Most persons will find difficulties and hardships enough without seeking them; let them not repine, but take them as a part of that educational discipline necessary to fit the mind to arrive at its highest good.

Family Doctor.

It is not wise to neglect present opportunities in the hope of meeting greater ones.

The man who has resisted temptation is safer than one who has yet to meet the tempter.

Buttermilk, which at one time was thought only fit for the hogs, as its virtues are better known is eagerly sought after as not only a healthy but a very pleasant drink, especially by the dyspeptic and old people. Down in the vicinity of Wall street the other day we noticed a stand on the corner of Liberty street, around which several old men, most of them millionaires, were gathered, drinking great glasses of rich, iced buttermilk. This, one of them said, was his lunch, and he often came down town to get his drink. The lactic acid dissolves the phosphate of lime, and keeps the blood in good condition, thereby preventing or retarding that ossification of tendons and arteries so common in old people.

N. Y. Med. Times.

If possible do your hardest and most undesirable work first—not reluctantly nor as a burden, but jump into it with alacrity. Court it, and do your best with it; for it will be your best discipline, and, therefore, one of your best means of growth and success.

DENTAL BRIEF.

VOL. III.

AUGUST, 1898.

No. 1.

ORIGINAL COMMUNICATIONS.

PRACTICAL THINGS IN DENTAL PRACTICE.

In Illinois Society.

Dr. J. G. Templeton, Pittsburg, Pa.

To make moisture-tight gutta-percha fillings.—Dry the cavity well, place in it a pellet of cotton saturated with absolute alcohol, remove the cotton, and with a warm air syringe evaporate the alcohol, varnish the cavity with rosin in chloroform, warm the gutta-percha and pack with a cold instrument; heat a thin-bladed instrument, and pare off the surplus gutta-percha; any further trimming or polishing required may be done with oil of cajeput.

If these directions are carefully followed, your gutta-percha fillings will be moisture-tight.

To protect from thermal changes, particularly in deep cavities, where the pulp is not quite exposed, first dry with bibulous paper, then apply on a small pellet of cotton absolute alcohol, which has a strong affinity for any moisture that may be left in the cavity or open ends of the tubuli. When the cotton is removed evaporation takes place rapidly, leaving the cavity dry. Now varnish inside of cavity to near the margin with rosin, in chloroform, or of gum sandarac dissolved in ether; then take a small piece of asbestos felt, moisten with pure wood creosote, campho-phenique or oil of eucalyptus; cover the side to go next to the pulp with a mixture of iodol, oxid of zinc and vaselin, and place over that portion of the cavity nearest the pulp. Over this place a thin piece of lead or a thin piece of aluminum, which will prevent pressure against the bottom of the cavity while inserting a metallic filling.

It is our humble opinion that the old-fashioned bur drill and excavator should be used more than they are in the preparation of cavities, instead of relying entirely on the burring engine as very many do.

The engine and the sharp bur may be satisfactory to the operator, but is much less so to the patient.

Our treatment for pyorrhea consists of thoroughly removing all deposits and then applying finely pulverized sulfate of copper, which is caustic, astringent and stimulating. The most aggravated conditions of this disease are found in the mouths of those who never eat pickles or anything sour, hence we are in the habit of recommending their use at meals, and also the free use of lemons and oranges. All such patients should be impressed with the importance of adopting an anti-scorbutic diet.

Placing Rubber-dam on Lower Front Teeth.—A slip-noose can be put on the lower front teeth with one hand, while the rubber-dam is held down with the other; get the slip-knots ready first, draw them tight, and they will hold as long as wanted.

Trimming Rubber Plates.—In finishing plates always trim the rim low over the bicuspid, leaving it high as can be worn over the cuspids and over and back of the second molars; do not file the rim to a knife-like edge; slightly bevel inside of it at the top, extending down about three-sixteenths of an inch.

To Make Platinum Gold Plate.—To make platinum gold plate, melt with blowpipe pure gold on a piece of platinum, and roll to the desired thickness; the result will be as good as any you can buy.

Gold Solders.—Take a United States \$5.00 gold piece, 20 grains coin silver, 10 grains pure copper, 6 grains English toilet pins, melt the silver and copper together first; after melting this and the gold together, add the pins, flow into an ingot, and roll; cut it into small pieces, and melt again if it should not roll well first time; this will give a solder a little more than nineteen carats fine, and flows nicely on coin gold, being the same color.

To Solder Cap on Gold Crown.—To solder a cap on a gold tube intended for an artificial crown, lay the cap on about a tablespoonful of finely cut asbestos, put the tube in place on the cap, drop in the solder and a little powdered borax, then blow a yellow flame all around the tube till the solder flows, and there will be no danger of melting the plate.

Polishing Instruments.—To keep instruments polished, use a material sold in wholesale jewelry houses under the name of diamantin; the method of using is to place a small quantity of the powder on a piece of thick spongy sole leather and rub the instrument on it, when it will soon take on a fine polish. This so-called diamantin is nothing but oxid of zinc, and can be bought in a wholesale drug house much cheaper than anywhere else.

To keep the rubber-dam from jumping off a lower molar tooth, tie a small bead in the thread to be used as a ligature, and apply around the tooth so that the bead will come on the lingual side of the tooth, and thus frequently avoid the use of a clamp, which is not admired by many patients.

Perfect Impression for Partial Upper Plate.—To take an accurate impression of the mouth for a partial upper set of teeth, smear plaster over the roof of the mouth with the finger, take a string about one foot in length, tie the ends together, put the tied end of the loop into the plaster on the roof of the mouth, and add more plaster to thoroughly imbed the knot, leaving the loop of the string hanging down. Have the plaster come full half way over the grinding surfaces of molars and bicuspid and cutting edges of the front teeth; then trim the plaster, and varnish the trimmed surfaces. The plaster should be so trimmed that it will fill up fully one-half of all spaces between the teeth; then cover all the remaining surface of the mouth and teeth with plaster, being very careful to have the teeth well covered and spaces filled in, putting on plaster for the buccal and labial surfaces. When set, the plaster impression readily parts where it has been varnished, the palatal portion is dislodged with the help of the string used, and the pieces are then placed together and the model made. If a tooth is irregular use modeling compound about it and trim suitably; then apply the plaster. When removing it breaks were joined; then remove compound, place in position in the impression, and pour the model.

Models of Marble Dust and Plaster.—In vulcanit work the best results may be obtained by making models one-fourth marble dust and three-fourths plaster; also same in flasking the case. The best plaster that I have ever used is that made by Mr. Higginson, at Newburg, N. Y. The best and sharpest models are made without using varnish of any kind on the plaster impression; instead lather the impression with soap, which is readily done by wetting a camel's-hair pencil and rubbing on a cake of soap and applying to the impression till it is covered, and then set it in a basin of water for a few minutes till the plaster has absorbed all the water it will take, when it should be held under the hydrant for about a minute to wash off the excess of soap; it is now ready for pouring or filling with plaster and marble dust to make the model, which, when it has set sufficiently, can, with the exercise of a little care, be separated as nicely as if a thick coating of varnish had been used. In this way a sharp model can be made without obliterating any of the fine lines of the impression,

which is one of the little things that should always be attended to at the proper time.

In all operations in dentistry it always pays well to attend to the little things at the proper time.

THE RELATION OF THE TEETH TO THE LIPS AND FACE.

Dr. A. O. Hunt, Chicago, Ill.

In Illinois Society.

By close observation and careful records phrenology and physiognomy have been brought to such a stage of perfection that, by the outlines of the body, combined with its movements, it is possible to tell the character and disposition of an individual, as well as what those characteristics fit them for in the way of occupation. Palmistry also, by the same careful observation and correct records, can make some very close guesses as to those things which govern an individual, both past and present, by the lines, the hills and mountains as seen in the palm of the hand, in the shape and outlines of the fingers and thumbs.

Art and sculpture have by the same means been enabled to fix a classical standard of the ideal shape of the human form as seen in the external outlines on the surface of the body, exhibited by the position and action of the muscles. There has also been established a definite relation as to size in the circumference and length of parts of the body, as compared to each other.

There are also distinctions in the distance between the eyes, the length, width and position of the eyes, length of the nose, size of the mouth, etc. And yet these features are so affected by their surrounding conditions, that the human family is divided into five distinct races of people, and again for reasons into tribal and national characteristics, still retaining all the essentials of the human form. Wherever the study of the human form has been specialized, both anatomy and physiology (form and function) have been well considered. It has engaged the best minds, and produced an extensive and valuable literature, such as Darwin's "Expression of Men and Animals," Rimmer's "Art Anatomy," various works on phrenology and palmistry, etc.

The subject here presented is one I have been investigating for several years, and repeatedly demonstrated the conclusions arrived at in the field of prosthetic dentistry.

This investigation was based on the belief that if the parts of the body had so many fixed relations to each other that other specialists had found a basis on which to build, that the teeth must also have a definite relative position to other parts of the head and face. If this could be shown it would relieve the dentist of many discouragements, and assist the beginner in mastering the most difficult operation with which he has to deal. Instead of being obliged to wait for eight or ten years before he begins to feel interest in the work, or confidence in himself in the field of dental prosthesis, a set of principles might be established as a basis, so correct that he could proceed intelligently in the construction of an artificial denture without fear as to the final results.

The methods followed by which the conclusions were reached, as presented for your consideration, was to make sets of plaster models of all classes of natural dentures, making at the same time, and of the same individual, two plaster casts of the lower half of the face; one with the features at rest and one where the teeth were closely occluded, both being essential in the study of the subject. The casts of faces made in these two positions show some widely varying conditions.

Our interest is centered more particularly in the lower fourth of the face, or the maxillary region where most, if not all, of the muscles of expression concentrate.

The lips will demand our first consideration. I do not think it necessary to take up in detail each muscle and its function. Into the orbicularis oris muscle anastomose all the elevating and depressing muscles; in the upper lip all but one are elevating muscles; in the lower lip all but one are depressing muscles. In the one, the depressor alae nasi of the upper lip, it is not so much a muscle of depression as one of eversion and inversion; that is, it will move the lip inward or outward, but not downward to any extent, while the elevating muscle of the lower lip has a very great function. In other words, it is with difficulty that the upper lip can be forced down over the lower lip, and with some it cannot be done at all; while nearly every one can raise the lower lip over the upper; sometimes to the extent of touching the base of the nose.

The lips assume many forms. The full lip, the thin lip, the flat lip, the pointed lip, the full upper lip and thin lower, and *vice versa*. In fact, the great law of variation is as constant here as elsewhere, and yet the change is never so great as to destroy the identity of the human characteristics.

The various changes of appearance are more apparent than real, as this appearance is controlled mostly, if not wholly, by the position of the teeth and shape of the alveolar process behind them. In following this investigation, if one expects to come on anything that may be regarded as typical either in the arrangement, size, form or occlusion of the teeth, they are doomed to disappointment; outside of the fact that they are human teeth and cannot be mistaken, there is nothing else typical.

Let us first consider the cuspids, the most important. They have a position distinctively their own, and but little variation is observed in that respect. In their development the position of the follicles are above the line of the follicles of the incisors or bicuspid. Their position is directly underneath the ale of the nose, between the fibers of the levator labii et aleque nasi and the levator labii superioris. In the process of development and eruption they retain this position between the muscles, and when finally in position the cusp or point is in a line with, and directly underneath, the outer margin of the ale of the nose. The only instances where this is not true (and they are rare), are where, by the premature eruption of the lateral incisor and first bicuspid, the two latter have come into close contact at the interproximal space. If, however, this contact is not close and there is room enough for the wedge-shaped lingual side of the cuspid to gain an entrance, the cuspid assumes its regular position, crowding the incisors and bicuspid either within or without the arch, or sometimes causing them to rotate in their alveoli.

Another instance where the variation may occur is where they erupt in the palate bones, or they may be locked within the arch by the occlusion of the apposing teeth.

The mesio-labial margin usually forms the turn of the arch. The labial surface is presented mostly to the buccal aspect. The central and lateral incisors, unless some of them are abnormal in size (which is not unusual) occupy the space between the cuspids. The variation in the relative width of the incisors is shown by the common irregularity as to alignment. It is very rare not to find them either slightly within or without the arch or some of them rotated in the alveolus.

The position of the bicuspid is that they are nearly hidden behind the cuspids, if the median line is taken as the center of vision. In every movement of the levator anguli oris and the risorius muscles, inward pressure is brought to bear on these teeth. This pressure is augmented by the action of the levator and depressor anguli oris muscles, as well as by the anterior

margin of the buccinator, in the act of opening the mouth. As the molars develop and erupt with the growth of the maxillary, they are farther removed from the action of so many muscles which changes the conditions materially. They are at liberty to follow the law of individuality which dominates all forms, and thus arrange themselves according to the temperament, whether basal or mixed in type.

The levator menti inferioris, the depressors labii inferioris and depressors anguli oris in the interlacing of their fibers present analogous forces to the muscles of the upper lip and cheeks, which operate to keep the inferior cuspids in their normal position.

The lower teeth are not so likely to be malpositioned when the upper teeth are in their normal places, except at the time of the eruption of the third lower molars.

In considering the lower teeth, we find the central incisors are always the length of the lower lip when the face is at rest. This is not likely to be the fact in the relation of the upper lip and upper teeth. Any unusual growth of the intermaxillary bones or a roundness or fullness to the superior alveolar border will cause what we call a short upper lip. The lip is shortened because when it is lifted above the rounded or full border of the process there are no muscles that readily act to bring the lip down over it; so much of an effort is required to accomplish this that the individual rarely exercises it. The result is, that many persons do not close the upper lips when the face is at rest, while at the same time the teeth may be very nearly in contact and the occlusal margins of the upper central incisors are touching the inner edge of the lower lip.

The variation in the profile of faces requires that some standard be used to decide whether the lip and teeth are of the same length.

If an instrument be passed between the lips at the parting at right angles to the plane of the lower fourth of the face, it will touch the upper central incisors at a point corresponding to the occlusal edges of the lower central incisors. If the teeth are separated slowly without disturbing the instrument or lower lip, it will be found that the point of the instrument will indicate the length of the lower teeth as stated.

The relation of the teeth to the lips and face are of such a positive character that there could not be a good and beautiful face without a correspondingly good arrangement of the teeth. It is possible for a close observer to tell by looking at the outlines

of a face without seeing the teeth as to whether any of the latter are missing or out of position, and which are so.

If in the construction of artificial dentures the principles as presented are noted and marked on the wax used in taking the "bite," and such other notes made as cannot be recorded on the wax, the element of guessing will be eliminated and the years of experiment to obtain a good result will be shortened materially.

We have then the following as a summary:

When the face is at rest the teeth are slightly apart.

The occlusal edges of the central incisors are touching the inner margin of the lower lip.

The cusps of the superior cuspids are in a line vertically underneath the outer ale of the nose.

The length of the lower incisors is the length of the lower lip.

TO DUPLICATE MODELS AND IMPRESSIONS.

In Illinois Society.

J. G. Templeton

Take printers' roller composition, melt in a water bath till dissolved. Grease the model slightly with lard, and place it the same as if to model a metal die; cover with a metal ring (a tin can opened at both ends will do), and pour the melted composition over the model. Let this stand over night. By morning the material is hardened, and the model can be withdrawn. The composition being elastic it retains its shape, and a hundred models may be poured, if necessary. Printers' ink rolls are made from glue and molasses.

Having to make a full upper set of teeth, we will suppose the impression and model to have been made in the usual way. Take modeling composition, soften and flatten it out till it is about a quarter of an inch thick; press it on the model while warm, and then cut and trim to make a trial plate for the purpose of taking a bite. It should accurately fit the model. Melt a little wax around the ridge, then press a roll of softened wax on that, and trim to what you think would be a sufficient length; then try in the mouth, and carefully trim the lower edge to the proper length for the teeth; if you find that it is not as desired, either add to or cut away till it is found, by trying in the mouth, that the wax represents the proper length. This wax should be so cut on its articulating surface that all the lower natural teeth

will strike at the same time when tried in the mouth. Now remove and soften the articulating wax surface just a little over the flame, then replace in the mouth, and do not let the patient bite into it until you have the head drawn well back, so as to put the interior muscles of the neck on a stretch; then have the patient bite a little on the wax, just to get an impression of the cusps and cutting edges of all the lower teeth. Next take an accurate impression of the lower teeth, from which make a plaster model, which will fit into the slight impressions of the teeth made in the bite taken, and then place the whole on any good articulator which can be set to maintain the relative positions. Fasten the set-screw, remove the bite, and you are ready to set the teeth to a correct articulation, and if all has been carefully done the teeth will come together without any subsequent grinding.

For an upper and lower set make trial plate of modeling composition to take the bite on, putting a piece of rather stiff wire in the lower one to stiffen it. Wax the ridges as previously described. Place a roll of softened wax on the upper trial plate, place the lower trial plate in the mouth, being careful to see that it is in its proper place, and hold it there while putting in the upper plate with the wax on it. Do not allow the patient to bite till the head is thrown back as far as you can get it; then tell the patient to bite, and keep the jaws closed till, with one finger, the wax has been well pressed on to the trial plates. Mark the center or median line on the wax. Have the patient close the lips, and then take a small straight instrument and mark on the wax the height of the lower lip. This mark should extend from one angle of the mouth to the other; you then have the line of fissure or line of lip closure; in other words, the height of the lower lip and length of the upper to serve as a guide in making the wax models. After thus taking the bite, place each of the models in the bite so obtained, and fasten in any good articulator; then prepare the contour wax models, which should be tried in the mouth to verify their correctness. They should come together in the mouth the same as on the articulator, and if they do not, they should be made to do so before proceeding further. Take pains to be satisfied that the wax models are correctly adjusted and give a natural expression to all the features, observing that the lower third of the face is in the proper proportion or length with the upper two-thirds, and be sure to produce the proper fullness over the region of the upper cuspids, to give as near as possible the natural contour. Then take the upper and lower plaster models off the metal articulator, and make a plaster extension to the back part of the

upper model, on which place the wax models, which have been marked while in the mouth. The lower plaster model is placed in position, and a plaster extension added to fit to that of upper plaster model. After separating these, the lower wax model is placed on the lower plaster model, and the inside space filled with wet paper, and plaster is poured over all to make the lower articulating plate to which the lower teeth are to be set. Next place the upper model in position, and set the upper teeth to the lower ones which have just been set to the lower articulating plate, and when ready for flasking, if for vulcanit plates, saw off articulating ends. In setting the teeth always set the lower teeth first. And in setting the upper teeth to the lower ones, set the bicuspid first.

Having made double sets in this way for twenty-seven years, without having to do any grinding after placing them in the mouth, the writer thinks that he has some claim to the conclusion that this method is pretty good.

When making an upper plate to articulate to lower natural teeth, always take an impression of the lower teeth, and in taking the bite, have the wax trimmed to show the length you wish the teeth to be, and bite into it just sufficiently to show the tips of cutting edges and cusps, where the model made from lower impression can be placed in proper position, etc.

To keep rubber from running between the teeth and joints in vulcanizing, after the teeth are set in the first half of the flask, the plaster trimmed and varnished, pour water on all the teeth and joints, then mix a small quantity of pure plaster, have it rather thin, and with mixing spatula cover labial and buccal surfaces, also joints, take up the piece quickly, and bring it near the mouth and blow rather sharply against the thin plaster all around, which will force it into all spaces between the teeth and blocks. After this finish flasking in the usual way and, if possible, it is well to allow the case to remain over night in the flask before packing.

To prevent plaster from adhering to the palatin surface of rubber plates, coat the model with a thick lather of soap just before packing the case.

To make rubber attachments adhere to metal plates (particularly gold), without punching holes or soldering pins and staples, clean thoroughly that portion of the plate to which the rubber is to be attached, using alcohol and chloroform to remove all wax or grease. After that scratch said portion over with a piece of new and clean sandpaper, next etch up the surface with a graver, being always careful never to touch it with the fingers or to blow the breath on it. Now with a hot spatula spread small clean

pieces of vulcanit over the etched surface, using considerable force till all of said portion of the plate is covered with the rubber, then finish packing the case in the usual way. When the piece is placed in the vulcanizer take half an hour to raise to 212 degrees, and from that point take three hours to raise to 320 degrees, after which allow it to cool slowly.

The greatest and most needed improvement in our profession to-day is prosthetics. In this age of progress of the arts and sciences of which so much has been said and written, and which we like to apply and hear applied to our profession, we can justly boast of our progress in everything else.

But alas, when we see wherever we go so many evidences of the low standard of this branch of dentistry, such disfigurement, such utter failure of any artistic skill without the appearance of any effort to restore the features. These false teeth are grinning at us at every turn. False did we say? Yes, false teeth everywhere; on the street, in the car, at church and in the social gathering. Their false appearance asserts itself like a horrible ghost, while the unsuspecting victim seems to enjoy their hideousness. Many of these miserable looking so-called substitutes have the magnificent hue or shade of well-watered skim milk, and looking about as much like human teeth as a row of small white beans set in the shape of a horseshoe.

What is needed is a systematic effort to instruct the people that they may know what prosthetic dentistry can do for them. When they realize what an artistic denture is, there will be no difficulty in receiving ample compensation for it. No wonder artificial plates bring such a low price. They all look alike. Those placed in the mouths of old people being taken from the same job lot as those inserted for the lass of eighteen summers, and for this reason the more intelligent people have a perfect horror of them, and do not want to pay much for them. Any dentist who has practiced for any length of time knows what a marvelous change can be made in the features of a patient by removing an illy adapted plate, and substituting for it one well adapted in all its requirements.

A few drops of strong ammonia water added to the water in which you wash will greatly facilitate the removal of grease and of blood, about half a teaspoonful to an ordinary basin of water. Of course, you must use soap as well.

Medical and Surgical Reporter.

SOUTHERN DENTAL ASSOCIATION.

List of committees for the joint meeting of the Southern Branch of the National Dental Association and the Louisiana State Dental Society, meeting February 9th-13th, 1899:

No. 1, Committee on Arrangements, in subdivisions—Transportation Committee.—Dr. Joseph Bauer (S. B. N. D. A.), Chairman, New Orleans, La.; Dr. Jules J. Sarrazin (S. B. N. D. A.), New Orleans, La.; Dr. C. L. Alexander (S. B. N. D. A.), Charlotte, N. C.; Dr. Ed. M. Kettig (S. B. N. D. A.), Louisville, Ky.

Hotels and Quarters Committee.—Dr. J. Rollo Knapp (S. B. N. D. A.), Chairman, New Orleans, La.; Dr. Joseph Bauer (S. B. N. D. A.), New Orleans, La.; Dr. Wallace Wood, Jr., (L. S. D. S.), New Orleans, La.; Dr. L. D. Archinard (L. S. D. S.), New Orleans, La.

Hall, Exhibits and Arrangements Committee.—Dr. L. D. Archinard (L. S. D. S.), Chairman, New Orleans, La.; Dr. Joseph Bauer (S. B. N. D. A.), New Orleans, La.; Dr. Phil. Friedrichs (L. S. D. S.), New Orleans, La.; Dr. Chas. Mermilliod (L. S. D. S.), New Orleans, La.; Dr. A. J. Foret (L. S. D. S.), New Orleans, La.

No. 2, Committee on Clinics.—Dr. T. P. Hinman (S. B. N. D. A.), Chairman, Atlanta, Ga.; Dr. J. Rollo Knapp (S. B. N. D. A.), New Orleans, La.; Dr. R. K. Luckie (S. B. N. D. A.), Holly Springs, Miss.

Committee on Clinics, Louisiana State Dental Society.—Dr. And. G. Friedrichs (L. S. D. S.), Chairman, New Orleans, La.; Dr. J. F. Johnston (L. S. D. S.), Ruston, La.; Dr. L. D. Archinard (L. S. D. S.), New Orleans, La.

No. 3, Committee on Publication.—Dr. Shep. W. Foster (S. B. N. D. A.), Chairman, ex-officio, Atlanta, Ga.; Dr. E. P. Beadles (S. B. N. D. A.), Danville, Va.; Dr. C. L. Alexander (S. B. N. D. A.), Charlotte, N. C.

No. 4, Committee on Oral Hygiene.—Dr. L. M. Cowardin, Chairman, Richmond, Va.; Dr. S. W. Foster, Atlanta, Ga.; Dr. J. Percy Corley, Greensboro, Ala.; Dr. I. Simpson, Rock Hill, N. C.; Dr. B. F. Arrington, Goldsboro, N. C.; Dr. J. N. Crouse, Chicago, Ill.; Dr. W. T. Arrington, Memphis, Tenn.; Dr. L. Augspath, Little Rock, Ark.; Dr. S. Dickson, Bolivar, Tenn.; Dr. E. F. Adair, Harmony Grove, Ga.; Dr. F. G. S. Gorgas, Baltimore, Md.

No. 5, Committee on Prosthetic Dentistry.—Dr. J. A. Dale,

Chairman, Nashville, Tenn.; Dr. Geo. Evans, New York, N. Y.; Dr. Ed. Eggleston, Richmond, Va.; Dr. Albert B. King, Baltimore, Md.; Dr. W. H. Morgan, Nashville, Tenn.; Dr. J. G. Fife, Dallas, Texas; Dr. L. D. Carpenter, Atlanta, Ga.; Dr. W. H. Cook, Denton, Texas; Dr. J. L. Wolf, Washington, D. C.; Dr. Jas. S. Knapp, New Orleans, La.

No. 6, Committee on Orthodontia and Oral Surgery.—Dr. Geo. Hardy, Chairman, Baltimore, Md.; Dr. L. M. Cowardin, Richmond, Va.; Dr. A. R. Melendy, Knoxville, Tenn.; Dr. J. E. Orrison, Baltimore, Md.; Dr. W. W. Corley, Talladega, Ala.; Dr. H. Marshall, Atlanta, Ga.; Dr. Jules J. Sarrazin, New Orleans, La.; Dr. E. P. Keerans, Charlotte, N. C.; Dr. R. C. Young, Anniston, Ala.; Dr. F. L. Wood, Roanoke, Va.; Dr. Wm. J. Younger, Chicago, Ill.

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No. 9, Committee on Pathology, Materia Medica and Therapeutics.—Dr. H. H. Johnson, Chairman, Macon, Ga.; Dr. H. A. Parr, New York, N. Y.; Dr. R. H. Jones, Selma, N. C.; Dr. E. B. Marshall, Rome, Ga.; Dr. J. T. Calvert, Spartansburg, S. C.; Dr. R. K. Luckie, Holly Springs, Miss.; Dr. J. W. Smith, Baltimore, Md.; Dr. F. Y. Clark, Saratoga, N. Y.; Dr. F. L. Wood, Roanoke, Va.; Dr. W. T. Coles, Newman, Ga.

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Chas. L. Alexander, Cor. Sec.

RECENT PATENTS RELATING TO DENTISTRY.

602084, Arm-support for dentists, Lauritz P. J. V. Kjoer, Copenhagen, Denmark.

602572, Saliva ejector, Arthur W. Browne and C. M. Kennedy, Prince's Bay, N. Y., assignors to S. S. White Dental Manufacturing Company, Philadelphia, Pa.

602581, Artificial tooth-crown, Merrill W. Hollingworth, assignor to S. S. White Dental Manufacturing Company, Philadelphia, Pa.

602582, Crown-post for artificial teeth, Woodbury S. How, assignor to S. S. White Dental Manufacturing Company, Philadelphia, Pa.

603179, Tooth fillings, William F. Davison, Richmond, Va.

602985, Device for laying gold leaf, Robert E. Hastings, Philadelphia, Pa.

602986, Device for laying gold leaf, Robert E. Hastings, Philadelphia, Pa.

602948, Tool for laying gold leaf, John C. F. Kunkle, Renovo, Pa.

602949, Tool for laying gold leaf, John C. F. Kunkle, Renovo, Pa.

603524, Electrical dental engine controller, James J. Coachman, Rio Janeiro, Brazil.

603280, Cuspidor for dental chairs, Frank G. McCollum, Cambridge, Mass.

TRADE-MARKS.

31458, Preparation for the painless treatment of irritated pulps, Gustav Scharmann, New York, N. Y.

605835, Electrolytic production of amalgams, etc., Emile and G. Andreoli, London, England.

605974, Dental chair, Frank Ritter, Rochester, N. Y.

606446, Fumigator, Joseph T. Commoss, New York, N. Y.

606198, Dental base plate, Warren R. Evans, Portland, Maine, assignor to S. S. White Dental Manufacturing Co., Philadelphia, Pa.

606338, Disinfectant apparatus, Francis Gizzi, New York, N. Y.

606456, Dental mouth mirror, Charles Harnden, Bowmanville, Canada, assignor to J. W. Ivory, Philadelphia, Pa.

606460, Dental matrix retainer, James W. Ivory, Philadelphia, Pa.

28934, Design, dental separator, Henry W. Gillett, Newport, R. I.

606755, Dental engine hand-piece, Arthur W. Browne, Prince's Bay, N. Y., assignor to S. S. White Dental Manufacturing Co., Philadelphia, Pa.

606781, Dental jaw brace, Robert L. Halperin, Chicago, Ill.

31681, Dentifrices, Hall & Ruckel, New York, N. Y.

31758, Disinfectants, germicides or deodorizing compounds, Henry S. Blackmore, Mount Vernon, N. Y.

31759, Antiseptic medicated soap, Charles I. Hood, Lowell, Mass.

John A. Saul, Solicitor of Patents.

A train that left Baltimore the other day for Tampa with supplies for the troops was composed of thirty-five cars, which carried 256,000 cans of tomatoes.

CURRENT THOUGHTS.

EXPERIMENTS WITH ALLOYS.

Dr. J. D. Patterson.

At the American Dental Association at Old Point Comfort.

I wish to say a word or two in regard to Dr. Crouse's very interesting paper. He says that the alloys upon the market do not exhibit the same peculiarities in different mixings. I wish to say that it is my opinion that alloys will exhibit the same results if they have been uniformly treated, and there is where the trouble is. Dr. Crouse, so far as appears from his statements before the association, at least, does not commence on a basis which gives any value to his experiments—that is, comparatively little value. So long as these different mixings of amalgam are made with different amounts of mercury and alloy, they will forever be different. He must commence on the basis of making the mixture with a definite amount of mercury and alloy, which is the proper amount, before these experiments will be of any value whatever. That is the statement I wish to make, and I think I am practically and scientifically right. Unless we can begin on that basis, what is the use of taking different alloys, mixed by different people, in a variety of ways, with different amounts of the materials, and experimenting with them?

It only proves what one man or another does, and gives us nothing of a scientific value. I have as much respect as anyone for the experiments of Dr. Black, which have been alluded to, but when Dr. Crouse says that Dr. Black was the first one to make those experiments with the micrometer, he is certainly mistaken, because history tells us that many years ago Thomas Fletcher, F.C.S., of Warrington, England, and others made these experiments, or at least the important ones, on the same lines.

I am very much interested in alloys, and I am very much interested in having some settled and definite way of treating the various makes of alloy which produces a definite result. I think it can be done in the way I have indicated. Taking the alloys on the market, it is true that some of them require different amounts of mercury mixed with the mass of shavings or alloy—this difference, however, is slight; but let each be treated upon a scientific basis. When you find out the weight of alloy

and mercury that make a perfect amalgam, you should adhere to that proportion. It should be the amount of alloy and mercury which, when put in a filling, under pressure, will give a harmonious relation, a perfect amalgamation, without any excess of mercury. When any excess of mercury is expressed, then the whole alloy is jeopardized, because it has been changed from what the manufacturers put out. I believe that the standard alloys are very carefully tested. I know that some of them are; not only every ingot, but different portions of every ingot are tested thoroughly, and if they are not up to the standard, they are not sent out. One package acts the same, as compared with another, if it is treated the same. Of course, if the manufacturers take sufficient care, and if the materials are treated scientifically, on the basis I have spoken of, the results will be uniform. I have told Dr. Crouse in private, and I tell him here, that I will take, not twelve samples of the same amalgam, as he stated, but twelve times twelve, mix them, and put them in his forms, and they will practically give the same results under his instruments. I am ready to do that here, or at any time. The instruments with which I work are not here, or I would gladly do it now.

USING SOFT GOLD.

Dr. Benj. Lord, New York.

I prefer soft foil because of its easy adaptation to the walls of the cavity and the greater ease and certainty with which it can be placed and packed without danger of tipping from becoming hard too soon, which is often true of cohesive gold.

Cohesive foils and other preparations of cohesive gold have their uses, such as the restoration of broken corners or the sides of the teeth, where it is desirable to make such restorations, but I may say I think it is done quite too frequently, particularly with the front teeth, thereby giving them a more unsightly appearance than the marred or broken corners would present.

My experience and observation lead me to believe that cohesive gold is not so well adapted for general use as soft gold.

In my judgment the best form in which to use gold is in sheets, parts of the sheet being folded in strips of suitable widths for the cavity in which they are to be used. Strips or folds can be handled with more ease and certainty in process of filling than can rolls, pellets, or blocks.

It is my belief that too many forms of gold are prepared

for our use, often leading to confusion and embarrassment, particularly on the part of the inexperienced. If my memory serves me correctly, the late Mr. R. S. Williams advertised that he prepared and had for sale one hundred and fifty different varieties of gold for dentists' use.

Filling teeth has so many difficulties to be overcome, and so much accuracy and fidelity are required, that we must follow certain lines for a long while, and, in the use of particular forms of gold, to arrive at excellence.

By using suitable points all cavities having three walls can be filled and the fillings contoured by the use of soft foil; this may be done with equal certainty and success with tinfoil or with a combination of gold and tin.

I depend mostly on a single form of instrument for placing the gold and for condensing it toward the walls of the cavity. Occasionally I use a point somewhat more curved to carry the gold already placed, with more force against the wall or into a corner of the cavity (always guarding against too much pressure), so that each additional layer may not only be placed against that which is already in position, but will be carried into it, thereby uniting the whole mass.

Then I come to the surface condensing, which I begin with a small four-sided instrument, curved to an angle of forty-five degrees and pointed, the sides grooved, and the edges of the grooves serrated.

I assume, to insure the best results, that the foil has been accurately placed, the layers added in regular order, and condensed as solidly as possible by lateral condensing, and that the gold is raised sufficiently above the margins of the cavity, so that after the surface is made solid by using the point of the instrument and the edges of the groove, the filling will still have a contour or oval surface, if an approximate filling. I wish to attach great value to this surface condensation with small points, as it spreads the filling to some extent toward the walls of the cavity, and ties the whole mass together more securely. I speak of leaving the surface of the filling contoured or oval, which is certainly most natural, and, if so, highly desirable, but there is interest in the old style of the flat surface, or even in the concave surface, as there is much more certainty that the gold will be made solid against the walls of the cavity, with less care, when the surface is thus worked down. We find that fillings so finished have done excellent service.

But by using points and making the pressure near the mar-

gin of the filling, so as to condense against the walls, and also using the edge of the groove of the instrument I have alluded to, full success may be secured, when the surface is left contoured.

I now come to the use of the broad instrument with one side flat and the other somewhat oval, both for further condensing and burnishing. The oval side will not be so likely to come in contact with the margins, and can be used to greater advantage to condense the surface; the flat side also possesses advantages over the oval for a part of the work.

I am now ready to give the margins their finish, and I think it will be seen that my instruments are well adapted for the purpose. They have one side flat and the other oval, are cut like burs, and are used much as a file of the same shape would be. For the final finishing I use a small instrument, the same as I use for the removal of tartar or any roughness about the teeth, and if there should still be any surplus gold at the margins, this instrument will be sure to detect and remove it.

I attach little if any value to the mere burnishing of the surface of fillings, only so far as it gives greater solidity to the surface. The great point in the finishing of fillings is the smoothness and solidity of the margins, so that no surplus material be left overhanging.

I do not think that any kind of a disk, sandpaper, or corundum should be used on the approximate surfaces for finishing fillings, as they are liable to cut away tooth-material or filling that ought not to be removed, and I do not like the use of the polishing strips, for the same reason. I also think that a bur or burnisher in the engine should never be used to reduce or polish fillings in the grinding surfaces of the teeth, as there is too much danger of reducing the cusps or injuring the margins of the cavity.

The grinding surfaces should be finished to correspond in irregularity to the natural surface of the tooth, and instruments may be used for that purpose. The burnishing is really of no importance except to give solidity.

I use Abbey's foil, and prefer No. 5. I cut a sheet generally into four pieces; if the cavity is small, I would cut the sheet in six pieces. I fold each piece into strips, for the larger cavities about an eighth of an inch wide, and for the smaller ones a sixteenth of an inch.

For the folding I use one side of my shears, instead of a table-knife or a paper-cutter, and I fold on a small cushion made of soft leather and filled with wool. I prefer this to anything

harder The strips are placed on a folded napkin, and I use the point of the instrument with which I am working to pick up the strip and carry it to the cavity. I usually cut the strips into two pieces, sometimes three. The instrument that I use and depend on mostly for placing, uniting, and condensing the folds is properly curved at the end, and an absolute point made by a very short bevel on three sides with a sharp file, and the fourth side touched at the point very slightly with the file, so that the line of the curve may not be changed.

I do not, as would be understood, condense with the point of the instrument, but with the side and edge of the bevel, and unite the folds with the point.

I strive as far as possible in placing the foil in the cavity, to fold the strip in so as to form a loop and bring the loop to the surface.

International.

A FEW DENTAL POINTS.

Dr. F. Mackenzie, in British Journal.

It is often difficult to remove the impression of some cases. Ask the patient to cough, and this will raise the soft palate and the air will be admitted between the composition and the palate. The impression may then be readily removed. The nauseous effects of the composition may generally be overcome by bringing the patient's head well forward after the impression has been got into position. To remove an impression in a lower case, insert the index fingers one on each side and press the cheeks outward from within.

The rattle of a full upper and lower case may be overcome somewhat by this method. Build up the case in the usual way in wax, but in packing remove the four end molars and pack white rubber in instead of the teeth. Thus, there will be four pads of softer material than the teeth, which, when they come in contact, will reduce the rattle.

When packing gum block cases, it is better to pack them as soon as possible after having boiled out the wax. The plaster seems to undergo some change, which allows the joints to open when the flasks are well heated. There are various ways of preventing the rubber from getting between the joints; one of the best is to get the joints fitted so that the whole of the side of the one block comes in contact with the whole side of the other. If only the labial edges of the blocks are in contact, a wedge-shaped

space is left behind, through which the rubber often contrives to run.

When the case is built up in wax with all the joints fitted, each ought to be taken off in turn, and all traces of wax and dirt removed from the joints. Then wax on again, but leave spaces opposite each joint, so that thin plaster, or osteo, or whatever is used, may be placed in the joint. The object is to keep the wax out of the joint entirely; finally wax up and put the case in the flask.

When removing teeth from an old vulcanite case, put a little wax on when heating in the gas. This will soften the vulcanite and render removal of the teeth easy. Another method is to boil the plate in water until soft; this will do away with the unpleasant smells with which we are all familiar.

When zinc and lead have become mixed, make a cone-shaped mold in the sand and pour in the melted metal. When the zinc has set, lift out of the sand, and the lead, still melted, will remain at the bottom; or leave the whole mass to set, and cut off the lead afterward.

The following method is useful for gold filling in an incisor, in which the corner of the tooth is broken off, and it is impossible to get an opposing point. Prepare the tooth for filling in the ordinary way, either for wedging, or with retaining pits, then on the lingual wall cut out a small key or dove-tail, taking care that it is in the strongest part, not too near the cutting edge of the tooth, or too near the base of the cavity, which in either case would leave a weak part in the tooth. The part where the opposing point ought to be need not be taken into consideration in preparing the cavity. Then proceed to fill the base of the cavity in the usual way, and build the gold up to and into the key, finish and polish. The filling will be quite as firm and perfect as if it were filled by means of an opposing pit. The tooth ought to be strong enough to bear the cutting out of the key, otherwise it will soon come to grief, but in suitable cases the tooth and filling ought to last a long time.

The largest advertising sign in the world is said to be on the hillside of an islet off the Grand Canary, northwest of Africa. It is several hundred feet above the level of the sea and contains the words, "Grand Canary Engineering Company," in letters each fifteen feet wide and thirty feet high, each bar of the letters being three feet three inches broad. The sign is 750 feet long.

OSTEOLOGY.

How many bones in the human face?
Fourteen when they're all in place.
How many bones in the human head?
Eight, my boy, as I've often said.
How many bones in the human ear?
Three in each, and they help to hear.
How many bones in the human spine?
Twenty-six like a climbing vine.
How many bones in the human chest?
Twenty-four ribs, and two the rest.
How many bones in the shoulder bind?
Two in each—one before, and one behind.
How many bones in the human arm?
In each one, two in each forearm.
How many bones in the human wrist?
Eight in each if none are missed.
How many bones in the human hand?
Five in each with many a band.
How many bones in the fingers ten?
Twenty-eight, and by the joints they bend.
How many bones in the human knees?
One in each, the kneecap please.
How many bones in the human hip?
One in each like a dish they dip.
How many bones in the human thigh?
One in each and deep they lie.
How many bones from the leg to the knee?
Two in each as plain to see.
How many bones in the ankle strong?
Seven in each but none are long.
How many bones in the ball of the foot?
Five in each, as the palms were put.
How many bones in the toes half-a-score?
Twenty-eight, and then no more.
Now altogether the number you fix,
They count in the body two hundred and six.
And then we have the human mouth
Of upper and under thirty-two teeth.
And now and then a bone I should think
That forms on a joint, or to fill up a chink.
A sesamoid bone, or a wormian we call;
And now we may rest for we've told them all.

—*Indian Medical Record.*

FILLING A BICUSPID.

Dr. Sidney S. Stowell, Pittsfield, Mass.

The treatment of carious cavities in approximal surfaces of bicuspid and molars is subject to so many modifying conditions that no fixed rule can be followed. Some cardinal principles should be observed—first and greatest in importance is: The object in filling teeth is to preserve them, not to display our skill as dental jewelers or to enrich ourselves at our patient's expense. Therefore, if the patient is young, or the tooth is soft, or the cavity deep, the excavating should be carefully done around the margins, leaving plenty of the leathery decay as a natural capping and permanent protection to the pulp, with the assurance that kind old Dame Nature will recalcify much tooth-structure which has been softened by decay if assisted a little and given a chance by protecting the parts with an antiseptic cement made by incorporating one-quarter by bulk of hydronaphthol powder with the oxid of zinc of our common oxyphosphate cement, first having bathed the cavity with 25 per cent. alcoholic solution of hydronaphthol and drying it out. A greater percentage of bicuspids are found missing or with devitalized pulps than any other teeth, as a result of delayed or unwise treatment. Therefore conservatism in their treatment cannot be too strongly urged. Allowing that the tooth is in condition for permanent filling, the cavity should be so shaped as to bring buccal and palatal margins well out from between and away from possible contact with adjoining teeth, that the margins may be automatically or self-cleansed; cervical margin should be cut to or below the gum line—masticating margin cut through the fissure, forming a dovetail anchorage for filling, which should be compound. Cervix or floor should be cut flat or slightly beveled outward and grooved for anchorage; perpendicular walls should be grooved sufficiently to retain the filling; cervix should be filled with tin and gold foil, No. 4 gold and No. 4 tin folded once together: use matrix in every case, placing it loosely at cervix at first to allow the tin and gold to swell out over margin, filling that part more than full that it may after be burnished and finished back to exact flush. The bulky portion of cavity may be filled with soft or semi-cohesive gold, or if on distal surface with tin and gold. Complete the filling with cohesive gold, contouring to nature and burnishing and polishing to perfection.

Digest.

THE PREPARATION OF THE MOUTH FOR A DENTURE.*

Robert H. Nones, D.D.S., Philadelphia.

In offering, this evening, this paper, it is not with the idea of presenting any originality whatever, but rather of calling attention to a part of that branch of dentistry which is seemingly much neglected—namely prosthesis.

We must observe carefully the condition of the parts, whether normal or abnormal; discover, if possible, the cause of the abnormal conditions, and remove or treat them. We must give particular attention to the extraction or retention of teeth or roots, and at the same time plan the future denture, mapping out what to make and how to make it.

In the examination of an edentulous mouth notice the general shape, whether it be regular or irregular, the vault high or low, the ridge prominent or flat. Note carefully any hard or bony protuberances in the vault of the palate, as well as an irregularly resorbed ridge of either the upper or lower jaw.

If the soft or flabby conditions of the tissues exist, proper relief or pressure must be given. Location of the muscles must be carefully observed, as it is of vital importance to the proper outlining of the plate, attention to which gives comfort to the patient. All these conditions have considerable bearing on the planning of the denture.

Another equally important condition is that of a fissure of the vault, starting in the soft palate and extending at times quite far into the hard palate. This is often so narrow in appearance as to deceive one as to its depth, except on close examination. These fissures run usually through the centre of the mouth, but may be found double, one on either side of the hard central prominence.

Frequently unsuccessful dentures would have been successful had proper cognizance been taken of this condition. The knowledge of its existence will enable us to avoid a space between the denture and the mouth, and to exclude the air which would otherwise enter.

Inflamed or irritated mouths, referring for the present to edentulous mouths, may result from various causes, both local and systemic.

Dyspepsia plays an important part, and its treatment would naturally be relieved by systemic treatment.

* Read at a meeting of the Academy of Stomatology, January 25th, 1898.

The use of ardent spirituous liquors and of tobacco may also cause conditions of irritability.

The most frequent cause of these inflamed or irritated conditions, and one which should be looked for, is a previously worn denture. How frequently will a patient, when we are about to make an examination, quickly remove from the mouth a denture, and with an expression of shame carefully close it from view in a napkin or in a handkerchief. The cause of the embarrassment generally is the filth.

Another cause, less frequent, but not at all infrequent, is the adaptation of foreign substances, such as wax, cotton, and even chewing-gum to ill-fitting dentures. In this connection I recall an incident showing apparently how an otherwise cleanly person may be unconscious of the actual condition of the mouth.

A gentleman, about sixty years of age, his general appearance denoting refinement, neatness, and cleanliness, sought my services to have a partial lower metal clasp piece repaired. One of the natural teeth had become quite loose, and he wished an artificial one attached to the plate in its stead. On examination I noticed it was rather a difficult piece to remove, and told him to remove it, as I wished to save him the inconvenience which is often occasioned by the removal by the dentist of such a piece. I shall never forget his look of mingled surprise and helplessness when he told me it had never been removed from the time it was first inserted, some five years previously.

I removed the piece with some difficulty, making no effort to hurry it past his nostrils during the withdrawal from the mouth, which caused him, as I had anticipated, to withdraw his head. It was foul enough and covered with calculus and debris. The discomfiture of the patient was marked, and not at all feigned. He informed me that he always believed himself to be cleanly, bathing at least once daily and changing his under-garments as precisely. His mortification was intense.

While we should naturally expect human beings to be cleaner in the mouth than any other part, it is our duty always to instruct them in regard to the proper care and removal of dentures.

Frequently we find the mouth irritated from roughness on the plate. In some cases there are prominences on so-called temporary plates which were formerly seated in tooth-sockets; in other cases sharp, rough, angularly outlined, and deep vacuum-chambers, or perhaps too highly outlined margins which impinge on the muscles and mucous membrane, cutting them and

creating irritable wounds, specially in lower dentures. How can we expect success to follow the making of a denture on such faulty foundations.

The treatment in such cases is simple. First comes the removal of the cause. If the denture be a metal one, carefully boil it in a dilute solution of sulphuric acid; on removal, allow it to cool, then wash with soap and water, and place in a solution of soda, thus neutralizing any acid beneath the teeth, after which any roughness should be removed and sharp or rough edges of vacuum-chamber dressed down and smoothed. The plate should then be brushed with a stiff lathe-brush and pumice, then polished and carefully washed.

The treatment of a vulcanite denture is the same, with the exception that it is allowed to stand in a cool solution of hydrogen dioxid in place of warm sulphuric acid.

Small pin-point prominences may be looked for, caused by the vulcanite forcing into the pores or small bubble-like places on the surface of the plaster, these are frequently a source of great irritation and annoyance to a patient, and they can be largely avoided by using a tin model instead of a plaster one. When they exist in a plate they should be removed.

The denture after proper treatment, providing it fits well and is not likely to cause further irritation, may be worn till the mouth is in condition for the impression, otherwise its use must be discontinued.

The medicinal treatment of the effects produced by the roughness consists in the application of antiseptic mouth-washes, such as "listerine," "borine," etc. The most effectual and quickest treatment I have found is the painting of the inflamed parts with tincture of iodine, together with the frequent use of a 3 per cent. solution of hydrogen dioxid by the patient as a mouth-wash.

During the examination of the mouth not infrequently will be found prominent points of the alveolar process, due to uneven resorption after the extraction of the teeth. These should be removed.

The attachment of the frenum of the lip to the alveolar process frequently being very low, it may interfere with the upper margin of the denture, or we may find what is known as a double lip or a false lip, which is caused by an ill-fitting plate or one extending too high. Some times this extends below the natural lip. These with the excessively flabby conditions may receive surgical treatment.

What is of less frequent occurrence is the prominence of the

alveolar process. I recall one which I was fortunate enough to see both before and after operation for its reduction. This was performed by Dr. M. H. Cryer. Any one on looking at the patient with her lips closed, which was a difficult act for her to do, would have concluded that her dentist had made a grave mistake in the fullness of her denture. Dr. Cryer removed about a quarter of an inch of the labial and buccal process, thus placing the mouth in a fit condition for an artificial denture.

Should the mouth not be an edentulous one, we may look for other causes of irritation.

One, and an important one, is salivary calculus, an irritant which should generally be removed. I have been very successful with the use of iodine in connection with the ordinary scaling method, which I follow up with and have the patient use freely the hydrogen dioxide.

In mouths containing some natural teeth we will frequently find partial dentures creating irritation of the gums about the necks of the teeth. A sinking in of the plate and a bulging out of the gum around and between the teeth and plate is caused most frequently by the plate not fitting accurately to the natural teeth.

The extraction or retention of teeth or roots depends on the advantages to be gained. When they cannot be made healthy they are to be extracted. To make a broad assertion, they are not to be extracted unless positively detrimental to the health of the patient and to the success of the denture. We must remember that an artificial tooth is not generally as valuable as the natural organ. No tooth is to be extracted merely to facilitate the taking of an impression or the making of a denture. We should adapt ourselves to proper circumstances rather than adapt the circumstances to ourselves.

If all the four upper incisors are in place, they should be retained, other conditions permitting, as the cuspids can be artistically matched to them.

The cuspids should be kept whenever it is possible; even the roots should be preserved and crowned, as they not only retain that facial expression which it is almost impossible to regain with an artificial denture, but they also guide and stay the bite.

They should be extracted, however, when they cannot be brought to a healthy condition, or when so abnormally situated as to interfere with proper adjustment of a denture, as, for instance, when interfering with the bite or protruding to such a degree as to cause disfigurement, or if dropping inward, especially if occluding inside of the lower teeth; or if there be exces-

sive recession of the gum, or a tilting from or toward the median line, thus making it impossible to properly adjust artificial teeth between the natural teeth; or if out of line from or toward the centre, not allowing sufficient space for the proper size or number of teeth; or if elongated, giving a marked canine expression to the face.

Bicuspid, except when on both sides of the mouth and useful as clasp attachments, should be extracted.

Molars should be retained whenever possible, as they afford a means of support by clasping in mouths which are difficult to fit with vacuum plates. The roots should be preserved and crowned for clasp attachment.

In the lower jaw none of the teeth should be extracted when it is possible to retain them, with possibly the exception of a single central or lateral or laterals in pairs.

The other teeth afford a means of support for a denture till the patient may become accustomed to its management.

In extraction all sharp prominences of the alveolar process should be removed, thus permitting a smooth, even resorption.

International.

FILLING PROXIMAL CAVITIES.

Dr. Chas. L. Johnson, Pittsfield.

If the carious surfaces are very sensitive, or the dentine soft, I adjust the rubber-dam, dry to a reasonable degree with hot air, remove the decay and fill with a mixture of oxyphosphate two-thirds, and a hydronaphthol one-third, for six months or so. If the tooth is reasonably hard and not too sensitive, I insert a permanent filling without further treatment. I make the the cavity occlusal as well as mesial or distal; cut the vertical walls back to such a position that the juncture of the filling and enamel edges is kept clean by the natural motion of the tongue and cheeks; I cut the cervical wall down to such a position that the juncture of filling and enamel is overlapped by the gum. I believe the most permanent and best filling to be made by using tin and gold for a cervical border; if the cavity is very deep, put in a capping of oxyphosphate two-thirds, and hydronaphthol one-third, completing the filling with gold foil, contoured to as near the natural shape of the tooth as possible. I believe in the use of a matrix, and like the double screw matrix designed by Dr. W. A. Woodward.

Digest.

CHANGES IN DENTAL STRUCTURES.

I thought perhaps something was going to be said about some of the systemic conditions and the environments which might possibly change teeth for the better or for the worse.

Dr. Black says that all teeth are equally soft; that the dentin of all teeth is the same in density; that they have the same specific gravity; that a good tooth is no better than a bad tooth; that any filling material that will save one tooth will save any other, and that there is no choice except on the part of the dentist between lead or tin or gold or amalgam. Well, now, I do not believe that bad teeth are always bad. I do not believe that teeth that are bad in the beginning are bad all through life. I am honest in being mistaken, if I am mistaken, but I believe I have seen changes in the teeth of some of my patients. I call to mind a patient who for ten years suffered from caries of the teeth. He was then leading a sedentary life. He changed his occupation, becoming a railroad man, thus securing plenty of air and exercise. His teeth before required constant care. Now he will go sometimes for five or more years without a single cavity in his teeth. He is an unprofitable patient, because his teeth do not require any care. Dr. Black would say that they could not change for the better.

I have a young lady coming to me who first visited me four years ago. At that time she entered college with as good, or better, teeth than the average. I saw her the other day. She graduated in June. She had worked hard. Her teeth are a perfect wreck. A breakdown from mental strain has caused that wasting away. You may say that is due to a changed condition of the secretions of the mouth. That may be, but does not the vital condition have something to do with it? There are some things we cannot measure with the yard-stick. There are certain things we cannot demonstrate with crucible or test-tube. We say we think it is acid; we think it is bacteria; that vital force has nothing whatever to do with it. But I believe that old John Tomes was right when he said that decay was chemico-vital. Dr. Black can weigh dentin. He can tell us just how much of the various salts are in it, but that cannot determine the quality of that dentin. I understand that his experiments were made with wet dentin, not dry. He does not tell us about enamel. We all know there is a difference in the density of the enamel. I believe that enamel is living; if not, I do not know how it could change its color and its hardness, and I believe the enamel changes its

hardness as well as the dentin. I have no doubt Dr. Black has made the most careful, painstaking experiments. I have the profoundest respect for a man who can go through the experiments and theories that he promulgates, but I do not believe in them. Still, I may be wrong and he may be right.

Dr. Darby, in International.

FILLING THE UPPER BICUSPIDS.

Dr. G. A. Bowers, Nashua, N. H.

Seventy-five per cent of the operative procedures are performed on these teeth. Owing to faulty manipulative skill or a lack of conscientious treatment early in life on the part of the dentist, they are either sacrificed or covered with a crown, and generally a gold crown. Frequent examinations, conservative treatment, and conscientious work must be the rule from their eruption. If they are early prone to decay they should be filled with cement or gutta-percha. Watch them closely, renewing the fillings if necessary until the patient is about twenty. At this age if they are of good structure they can be permanently filled, and in doing this an opportunity is afforded the dentist of exhibiting his most artistic skill. When a bicuspid is artistically filled, bringing out the beautiful lines and contour, it is a sure criterion of a good dentist. In the cavity preparation use the chisel freely, never hesitating at sacrificing tooth-structure to accomplish your desired result. Extend the cavity cervically, and beveling so that the gum will come down over the finished filling. The seat of the cavity should be practically flat, with the buccal and palatal grooves extending and rounding into it. A wedge-shaped retention is supplemented in the sulci. Finally, see that your margins are well defined and sharp. A good chisel will do this. Do not use strips or disks, for you will invariably get a rounded edge, and therefore a slivering of the gold at that point. I should always use gold if I could get my pay for it. I think it is perfectly safe and a good practice to use a matrix. I almost always, however, fill the cervix, first burnishing and finishing it. Then apply the matrix and complete the filling. I use Woodward's matrices more than any other, numbers 6, 7, and 8. For special cases where these are not suitable I cut them out of matrix metal and contour them. They can be kept in position with a clamp or orange wood. *Digest.*

SUCCESS.

To succeed in any undertaking there must be an intense longing to realize a definitely conceived ideal which seems to be worthy of any sacrifice. Taine says that "success in life depends on knowing how to be patient, how to endure drudgery, how to un-make and re-make, how to recognize and continue without allowing the tide of anger or the flight of imagination to arrest or divert the daily effort."

That a brilliant man cannot succeed by simply relying on the work of his talents is shown by the continuousness of effort displayed by famous men on some of their works. Gray spent seven years in perfecting his "Elegy" which can be read in seven minutes. Prescott worked twenty years in the libraries of Europe collecting material for his Spanish histories, and a large portion of that time he was stricken with blindness so that he had to make use of the eyes of another. Gibbon re-wrote his "Memoirs" nine times, Newton one of his philosophical works fifteen, and Addison his essays twenty times. Spinoza and Buckle each spent twenty years in carefully forming and maturing their judgment before they published their systems of thought. Balzac, before he commenced a work of fiction, wandered week after week up and down the streets of Paris, studying phases of character and prying into the different modes of life. Then he excluded himself from society for months at a time perfecting his plot and writing the work. He read the proof two or three times and made many corrections. Dr. Harvey spent eight Dr. Jenner twenty, and Sir Charles Bell forty years in maturing their three famed discoveries in medical science. Titian painted daily on one picture for seven years and for eight on another.

A man can properly consider himself successful if he accomplishes the best results to be attained in his own particular sphere. As an editorial writer in the *New York Sun* said, not long since: "The truth is, that man is most successful who best and most fully puts to useful service all his powers and faculties, who finds and utilizes the opportunity for their employment; or, in other words, gets into the place which he is best fitted to fill," whether it is in the ordinary walk of life, or in a larger and higher sphere, he is equally successful, provided he is putting forth all the energy and making use of all the capacity for work within him. Thousands of men fail because they are trying to do the work for which they are not fitted. Stentor was not a great man, but his name has been handed down through history as the most suc-

cessful herald in giving his commands to the Grecian army, Homer calling him "great-hearted, brazen-voiced Stentor, accustomed to shout as loud as fifty other men."

It is necessary that a man shall like his work, or at least like it as well as he can like work of any kind, because he must enter into it with enthusiasm. "Without enthusiasm," said Montalembert, "your life will be a blank, and success will never attend it. Enthusiasm is the one secret of success. It blinds us to the criticisms of the world, which so often dampen our very earliest efforts; it makes us alive to one single object, that which we are working at—and fills us not with the desire only, but with the resolve, of doing well whatever is occupying our attention." Dr. Arnold, of Rugby, used to say that the main difference between men in life is simply one of energy; but, after all, energy is of no use if it misdirected. A man engaged in an occupation for which he is unfitted may exhaust all his energy in an effort to bring about satisfactory results. Then, again, there is a distinction between energy and activity. Some men are busy enough, but their efforts, having been misdirected, even in a vocation for which they are fitted, have been simply a waste of activity. A marksman may fire all day at a target, but, if he does not take a good aim, his time and powder are wasted. Most men mix a pound of ambition with a grain of energy, and then wonder that the world refuses to admire the mixture.

Even in the spiritual realm a man cannot attain to lofty heights without energy. "No man," says Cecil, "ever found a happy life by chance, or yawned it into being with a wish. Even the Kingdom of Heaven suffereth violence, and the violent only take it by force."

Sir Andrew Clark, President of the Royal College of Physicians, once said that he believed that every man's success was within himself, and must come out of himself; that it must be seriously in earnest, acting with singleness of heart and purpose, and must learn to love work through practicing the habit of working until "at last you will not only abhor idleness, but you will have no happiness out of the work which then you are constrained from love to do."

Every important business plan must be properly thought out before action is taken. You may jump at a conclusion, but you cannot spring into a success. The aphorism of the Duke of Wellington ought never to be forgotten, that success can only be attained by tracing every part of every operation from its origin to its concluding point. After all, Davy Crockett's saying would

seem to be the golden rule of business: "Be sure you're right, then go ahead." Old Commodore Vanderbilt, being asked one day what he considered to be the secret of success in business, replied: "Secret? There is no secret about it. All you have to do is to attend to your business, and go ahead."

A man may have every qualification for success and yet fail if he does not take advantage of opportunities. He must be wise enough to recognize, and quick enough to profit by them. A famous sculptor once showed a visitor the treasures of his studio. In it were many mythical gods. One particularly attracted the visitor's attention. The face was concealed by being covered with hair, and there were wings to each foot.

"What is his name?" said the spectator.

"Opportunity," was the reply.

"Why is his face hidden?"

"Because men seldom know him when he comes to them."

"Why has he wings upon his feet?"

"Because he is soon gone, and once gone he cannot be overtaken."

Another useful qualification for success is tact. Without it the best intentioned are forever meeting with obstacles and hindrances, while he who possesses it finds friends who are ever ready to help him on his way. It is the attribute which hides one's motive, as the bitter components of a pill are secreted within their environment of sugar. The boor speaks his mind, but the tactician minds his "speak."

There is nothing very striking in the advice of business men as to how ordinary mortals shall attain fortune. The maxims of the elder Baron Rothschild were to attend to details; be prompt; take time to consider, and then decide quickly; dare to go forward; make no useless acquaintances; shun liquor; employ your time well; do not reckon on chance. "Then work hard and you will be certain to succeed." Not at all certain, because no notice is here taken of adaptability to and love of the vocation, opportunity, tact, good judgment and enthusiasm, all of them more important factors than those mentioned for the attainment of good fortune. Andrew Carnegie thinks that the three dangers in a young man's path are the addiction to liquor, speculation, and endorsing. The most important statement he makes in connection with the subject is "It is not capital your seniors require; it is the man who has proved that he has the business habits which make capital."

A pithy explanation of the success of quack doctors and

patent medicines is given by one who ought to know. A quack in immense practice in London once consulted the great physician Abernethy for some personal ailment. Curious to know the secret of his success in attracting clients, the surgeon asked him if he knew why he had so many more patients than any regular physician. Drawing Abernethy to the window, he pointed to the surging crowd in the street below, and asked:

"Doctor, of every one hundred persons who pass this window, how many do you suppose are educated people, capable of appreciating study and cultivation in others?"

"Perhaps ten," answered the famous surgeon.

"Exactly," rejoined the charlatan. "Well, you get those ten; the rest come to me."

If we can discover definitely why men fail in business, we will be far on the road toward learning how they can succeed. Here, again, it is difficult to lay down absolute rules that will apply to all. Men fail simply because they lack one or more of the numerous elements that go to make up success. A leading New York merchant who has given years of careful study to the cause of so many failures among the commercial classes says: "I think the causes of commercial failures may be classified as follows: Six-tenths ensue from inexperience, extravagance and negligence. Two-tenths from natural dishonesty. One-tenth from speculation. One-tenth, the unfortunate man. There is not sufficient attention given to the training of men for mercantile life. Every young man intending to follow mercantile pursuits ought to spend some years in preparation in a methodically conducted establishment. He should be trained as to values, how to buy and how to sell, and also as to management, from the picking up of the string from the floor to the banking of his cash. There are instances where men and women of modest pretensions have commenced in a small way and finally succeeded; but their training comes with the development of their business. They know not only how to make a little money, but also how to save what they make."

Geo. J. Manson, in Success.

A traveler through Servia will often notice dolls hung up inside the cottage windows. He learns that the dolls are put up as a sign to announce to wayfarers that a marrigeable daughter dwells in the house.

FEES, AND HOW TO COLLECT THEM.

Dr. A. B. Freeman, Chicago.

The stock in trade or capital of a professional man is not alone the office equipment and material which he may use in conducting his business, but rather the long years of patient toil, study and expense necessary to fit him for practice, the technique, education of brain and muscle which make the services of the successful practitioner valuable to his clients.

Not the least valuable item on the inventory of the dentist's stock is his precious moments—sixty of which make an hour—for every one of which he should receive compensation when reserved for patrons and the appointment is broken without reasonable notice—and reasonable notice is not one minute or one hour.

The fees charged should, therefore, be reasonably commensurate with the foregoing facts and the substantial character of the service rendered.

As a class, doctors are acknowledged to be poor business managers, and not far sighted beyond the ken of their daily routine. At the operating chair and the sick bed their judgment is keen, but beyond giving their best thinking powers to their patrons and matters of a professional nature their keen perceptive faculties seem to fail them, and their surplus earnings, if they are so fortunate as to have them, are often invested in rosy-tinted schemes, and trusted to the management of others, where conservative business men would hesitate to place them. The result is losses which can never be regained.

If there be an individual in any vocation of life, either commercial, agricultural or professional, who deserves just remuneration for his services or a comfortable competency in his old age, I assert it is the dental practitioner. For, in addition to all the intimate relations and attentive services of the medical practitioner, do we not advance quite a large proportion of cash to each patron to render our services?

It is a notorious fact that in all great metropolitan centers like Chicago quite a large percentage of the population, comparatively speaking, is made up of impecunious persons, either of the improvident or dishonest class, the one contracting debts without thought of how the bills are to be met, and the other class with only the one intention of getting something for nothing.

None of us have objections to the gratuitous treatment of the worthy poor at the free dispensaries or the dental clinics, and most of us willingly and gratuitously contribute to the comfort

of many of our unfortunate patrons and friends each year, but we should draw the line at impositions.

Heretofore each victimized practitioner has considered imposition to be one of the inevitable results, and while he has probably never allowed himself to be imposed on a second time by the same individual he has never lifted a finger in protection of his professional brothers, while the same dead beat has continued to practice his evil art whenever necessity demanded.

It is not an alluring prospect which confronts us as we scan our accounts from year to year and note, with dissatisfaction, that we have been victimized by from six to ten new imposters within a twelve month.

The average annual tribute which I have personally paid this fraternity for the ten years last past is trivial indeed, and yet it amounts to \$1,200 for the term.

Admitting the proposition, as we must, that as a profession we have no adequate protection against the dead-beat evil, the question naturally arises, why not?

The chief reason would seem to be a lack of earnest coöperative organization, in the management of which the profession at large has the utmost confidence.

The benefits to be derived from coöperation, or the association of any number of persons who act conjointly for their common good, are well understood, and no better illustration can be cited than the Dental Protective Association, under the able leadership of Dr. Crouse.

The large commercial interests, both wholesale and retail, are protected by inflexible credit systems and reliable information furnished by well-known commercial agencies.

During the past few weeks the real estate brokers and rent collectors of this city and St. Louis have been actively agitating the formation of a rating department, to be conducted by the real estate boards, for the sole purpose of protection against dead-beat tenants.

The retailers of contracting and building supplies have an ideal coöperative organization in this city, and furnishes protection to a large membership, including all departments of supply in this trade.

The physicians of New York City are organized.

The physicians of Chicago chartered and organized the Physicians' Business Bureau some three years since, and have an admirable scheme for coöperative protection, which has practically been inoperative, chiefly because by far the larger portion of

the profession has been indifferent—only one hundred and fifty joining the bureau out of a profession numbering three thousand.

The medical and dental professions in Philadelphia are furnished adequate protection by a private agency with whom they coöperate.

These facts illustrate that in other avenues of industry, as well as in our own, to some extent, there is organization for protection.

The two organizations, the methods of which the writer has familiarized himself, seeming to embody the most desirable features, are the Philadelphia Physicians' and Dentists' Bureau of Information, and the one furnishing the protection for the retailers to the building trades in this city.

Their *modus operandi* is the same, in the main, and is as follows:

There is a central organization with a nominal membership fee, the members signing an agreement not to furnish information to any one, and to consider all reports as confidential.

The members report names and addresses of all irresponsible parties who have failed to settle their accounts after proper diligence on the part of the creditor.

The central organization furnishes an annually revised list of names, without comment, and advises each subscriber or member that the name of no responsible person is to be found in this list. Monthly, quarterly or semi-annual report of names is required, and additional lists mailed as deemed advisable.

Whenever a delinquent settles an old account it is reported that he has redeemed himself, and the name stricken from the list. These two associations differ in but one point. The latter one, on having a dead-beat reported by a member, sends immediate notice to all other members that a brother member "recommends" this party to the association.

The members fully understand what a "recommendation" means, and govern themselves accordingly.

To conclude, it would seem to be worse than useless that there be a multiplication of organizations in the medical and dental professions, as then the best results are partially, if not wholly, lost.

If there could be a combination of all medical and dental interests, and this combination, as a whole, coöperate, and furnish the names of dead-beats, as well as those of very doubtful credit, what could not be accomplished in the way of coöperation and self-protection?

Review.

DEATH RATE OF DENTISTS.

Dr. A. B. Freeman, Chicago.

The average age at death of the statesman, clergyman, lawyer, physician and dentist; the farmer, mechanic, laborer, teacher and other vocations seems to vary from sixty-eight years to forty-three years, while the average age at death of the dentist is at forty-five years, and, with a single exception, is the lowest average age at death in any vocation of adult life.

In corresponding with the Superintendent of Vital Statistics for the State of Massachusetts, and with leading actuaries east and west, as well as consulting the United States census reports, I have been unable to verify these statistics; but Dr. Ogle, a celebrated English statistician, in his latest mortality calculations, based on English census returns, states the lowest death rate in any vocation to be that of the clergy—their average age being close to sixty-eight years.

Second he places the legal profession, and includes the statesmen, their average age at death being about sixty-four years.

Farmers and gardeners also die at about this same average age. Physicians come next, with a good average of fifty-eight years, while those following occupations requiring cramped, constrained positions, or who are subjected to excessive work, mental or physical, as, for example, silk weavers, lace makers, and, possibly, the shoemaker and dentist, the mortality rate is very much higher.

The deductions to be drawn from such statistics and reports are quite apparent, *i. e.*, that the arduous labor, the severe physical and nervous tension resultant from long operations, often repeated by the busy practitioner, together with the confinement incident to exclusive office life, tend to shorten the years of the dentist's usefulness.

He should ever keep before his mind that first law of nature—self-preservation—and husband all his energies; but how few do this.

At about the time the average dentist has secured his professional education, and by dint of hard work and many sacrifices earned the amount sufficient to repay the obligations incurred during his student life and to properly equip an office, he is either incapacitated by failing health, or by reason of advancing age, from reaping very much of the fruits from his toil.

Review.

TO REMOVE ENAMEL PREVIOUS TO CROWNING.

H. H. Johnson, D.D.S.

Take a molar or bicuspid for example, which is to be prepared for an all-gold shell crown. When spacing will be required between the tooth to be crowned and the adjoining tooth, it can be more easily accomplished with vulcan disks, which are thin, strong, flexible and cut rapidly.

Care should be used not to cut the opposite tooth, which can easily be avoided by using pressure toward the tooth to be prepared. By the time sufficient space has been obtained these two sides, the anterior and posterior approximal, have generally been squared up very well, as these thin disks will easily pass down below the festoon of gum and remove the enamel.

The buccal and lingual sides and the approximo-buccal and approximo-lingual corners is generally where the difficulty is.

The buccal and lingual sides down to within a few lines of the gingival margin may be easily and rapidly cut away with small carborundum wheels, which now leaves the crown of the tooth above the neck in a square shape. The disk has flattened it on the approximal sides, and the small wheels on the buccal and lingual sides. By taking small, thin, double convex carborundum wheels these corners may be cut down till the tooth takes a proper shape and the enamel is removed, except a little ring around the neck of the tooth, which generally extends up just beneath the gum margin. To remove this little ring of enamel there is nothing so effective as the vulcan or concavo-convex wheels. The thin edge of these little vulcan cup wheels will pass easily down below the margin of the gum scarcely wounding it and cut off all the irregularities and excrescences. The range of work which these little wheels will do is remarkable, and they are hard and tough and do not wear easily. After cutting and leveling down the bumps, the surfaces of the crown should be planed off smooth by using scalers made very hard and sharp. For this purpose the ordinary diamond pointed, double-edged scalers are best.

By placing the thumb on the crown of the tooth and grasping the scaler firmly in the fingers, commencing at the gum line and pulling toward the cutting edge, the surfaces can be effectually planed off and rendered perfectly smooth. If any enamel should have been left by the wheels it can be easily removed with the scalers in this way.

As these scalers come from the manufacturers, they are too

soft for this purpose, and must be hardened. This can be done by heating the point to a white heat and plunging in cold water or oil. Some claim that mercury is still better.

American Dental Weekly.

PERCENTAGE SOLUTIONS.

Since the advent of cocain and other local anesthetics in dentistry, solutions of various percentages of strength have been recommended for hypodermic use, and much confusion has grown out of the indefiniteness of the term per cent, used to designate the strength of solution employed.

The essential cause of this confusion is to be found in our blind adherence to the English system of weights and measures, which is arbitrary and illogical, instead of adopting the French or metric system as our official standard.

As by the metric system the unit of weight is directly convertible into volume terms, a percentage solution by that system is readily formulated. For example, one gram of cocain dissolved in water sufficient to make 100 cubic centimeters would furnish a one per cent solution, for the simple reason that one gram and one cubic centimeter of water at normal temperature and pressure have the same weights, and a solution made as above would consist of one part of cocain in 100 of water, volume and weight corresponding exactly.

By Troy or English measure the case is different. If our solution is to be by volume, there being 480 minims in a Troy ounce fluid, a one per cent solution would be made by adding 4.8 grains to one fluidounce, and the resulting solution would contain 1-100 of a grain in each minim of fluid. Multiples of the quantity of cocain salt required for the one per cent solution readily give the quantities required for higher percentage solutions.

The Troy ounce of water, however, weighs 455.69 grains, so that if the percentage solution were to be made by weight, a one per cent solution would be made by adding 45.6 grains to one fluidounce of water.

The common practice among apothecaries in making percentage solutions of cocain is to base the calculation upon volume, so that the percentage will in each case indicate the fraction of a grain in hundredths which each minim of solution contains.

Ed. Cosmos.

PRACTICAL POINTS.

By Mrs. J. M. Walker, Bay St. Louis, Mississippi.

Rubber-dam Matrix.—When adjacent cavities are to be filled with cement, a neat matrix is found in a narrow ribbon of rubber-dam drawn taut over the adjacent tooth until the cavity is filled—then reversed over the new filling until the second cavity is filled, using one mix of cement for the two cavities. With a little tension the strip may be trimmed quite close, leaving what remains as a separator until the next day, when there will be no trouble in properly finishing the fillings.

J. T. Danforth, Ohio Den. Journal.

Alcohol as a Disinfectant.—Recent researches seem to show that absolute alcohol is devoid of all disinfectant properties. Proof spirit (50 per cent) gives more tangible results in this direction than either stronger or weaker solutions. Antiseptic substances, which in aqueous solution are more or less active germicides, entirely lose this property when dissolved in strong alcohol. But on the other hand corrosive sublimate, carbolic acid, lysol and thymol dissolved in a 50 per cent solution alcohol disinfect better than aqueous solutions of the same strength.

Medical Press and Circular.

Prevention of X-Ray Burns.—A sheet of aluminum, if grounded and placed between the tube and the patient, will prevent the burn, while interfering in no way with the X-Ray phenomena.

Dr. C. L. Leonard, Journal Am. Med. Association.

Uninflammable Celluloid.—If two solutions—one of one part ordinary celluloid in ten parts of acetone—the other of two parts powdered chlorid of magnesium in six parts of alcohol—are made each into a paste, and then carefully mixed and dried, an uninflammable celluloid is obtained. *Chemist and Druggist.*

Root-canal Filling.—Dr. W. T. McLean recommends asbestos fibers, saturated with silver nitrate solution, protected with Harvard cement. The advantage of asbestos is not quite clear, silk or flax would answer as well. Fully saturated with silver nitrate they would not undergo any change in the tooth canal. There are other antiseptics as good as silver nitrate and which will not discolor the tooth.

Dr. J. Taft, Dental Cosmos.

Protection from the Breath of Patients.—With the nominal object of preventing the breath exhaled from the nostrils of a patient from moistening the gold, cut a piece of paper to slip under the folds of the rubber-dam that covers the upper lip, and bend it in front of the nostrils to form a funnel, conducting the breath exhaled from the nostrils away from the alfacories of the operator as from the seat of operations.

A. F. Merriman, Jr., Pacific Gazette.

To Sharpen Hypodermic Needles.—First pass the cleansing wire through so that it will protrude at both ends. Then with corundum wheel in engine, grind off the point of needle and the wire at the same time, then push the wire through from the other end carrying all debris with it.

J. B. Spooner, Dental Digest.

A Cheap Moldin.—The clay to be obtained from art stores, mixed with glycerin, makes a good article of moldin. It can be mixed with water, but dries out quickly and requires mixing for each time of using.

Am. Den. Weekly.

When Caries Extends to the Bifurcation of the Roots.—Make a mat of two or three layers of tin foil, place it at the bifurcation and use it as a base for filling the rest of the cavity with amalgam.

H. L. Ambler, Pacific Gazette.

Saving Devitalized Teeth.—A pulpless tooth having been deprived of its principal source of nourishment, soon becomes brittle, and should be protected from fracture through leverage in mastication; this can be done by grinding away the occlusal margins preventing excessive bearing upon the tooth and rendering it less liable to pericementitis, this will materially assist in saving it.

A. W. Chance, Pacific Gazette.

A Possible Cause of Death of Pulp Under Cement Fillings.—Dr. Prothero states that tests reveal the presence of arsenic in most of the cement powders on the market, arsenic being usually present in commercial oxid of zinc. Can this be the reason why so many pulps die under cement fillings? *Am. Dental Weekly.*

Protection for Arsenical Applications.—When the cavity margin is in dangerous proximity to, or under the gum, first build in the cervical portion of the covering with amalgam (for which purpose nothing is better than "Flagg's facing," as it does not leak and is easily removed with an excavator). Then make the application, covering it with a pellet of dry cotton and build in the remainder of the covering.

Otto E. English, International Den. Jour.

Formaldehyde for Burns.—If compresses soaked in a ten per cent solution of formaldehyde, are applied to the affected part, it is said that in ten minutes all the pain ceases ; continued renewal of the application causes all traces of the burn to disappear, so that not the slightest redness of the skin is left.

Modern Med. Science.

Combination Filling, Oxiphosphate and Gutta-percha —

In bicupids, and sometimes in molars, where the cavities extend well below the gum line, particularly on the approximate surfaces, in teeth of soft and chalk-like structure, coat the floor of the cavity with chloro-balsam and fill with gutta-percha to about one-sixteenth inch above the gum line ; the rest of the filling to be made of cement. This filling has the advantage of cement in strength for contour, adhesion for anchorage, without the disadvantage of washing out at margin the defective point of all cement fillings.

F. T. Van Woert.

Porcelain Inlays.—Prepare cavity as for gold, fill undercuts with wax to facilitate removal of matrix. Form matrix of 60 or 80 gold foil, first pressed into the cavity with firm wad of cotton and then burnished in. I use Meyer's prepared glass powder which flows to the surface of the gold as though it were solder, and makes a hard filling which has a surface like that of an English tooth. I set with Harvard's cement because of its adhesive and other good qualities.

Dr. A. V. Elliot, Florence, Italy.

Setting Crowns and Bridges with Gutta-percha.—I set a great many of my bridges, and nearly all of my single crowns with gutta-percha, putting it around the pin and around inside the band. Force into place while the root is moist, so that it can be readily withdrawn and the surplus trimmed away. Then dry the root, put in a little chloroform, and put crown in place. A bridge can be set equally well.

Dr. Belyea, International.

To Check Flow of Saliva.—In filling lower third molars, when it is found impracticable to place rubber-dam, the annoyance of excessive flow of saliva may be overcome by the administration of sulphate of atropin, $\frac{1}{120}$ gr., three-quarters of an hour before appointment. The mouth will be found dry, though not uncomfortably so.

H. Otis Loque, Southern Dental Journal.

To Clean the Mixing Slab.—A piece of wet pumice-stone will remove cement from the mixing slab with neatness and dispatch.

Geo. M. C. Barnard, Dental Digest.

ITEMS.

The fruit of success does not grow on the tree of idleness.

Listen not to the advice of the man who has failed; follow that of him who has succeeded.

There is but little that man may not accomplish, but do not seek that which is unattainable.

No man ever climbs a ladder at a bound. Each round represents a step in the progress of achievement.

Battles are won only by fighting, and the more earnest the fight, with might and mind fully engaged, the greater will be the victory.

The farmer never lived who could reap a crop without sowing seed, and the crop he reaps shows the kind of seed he used and how he sowed it.

An imitator may reap a measure of success, but it will only serve to show how much greater he might have become had he been original.

A GOOD SUGGESTION.—We are of the opinion that the more the dentist knows of surgery and medicine the higher will be his appreciation of the surgeon and physician, and the more careful and the more able will he be to conduct his dental practice on the lines of his specialty, and avoid the pitfalls of a "little knowledge."
—*Journal of the British Dental Association.*

SUED FOR RECOGNITION.—The *Pacific Gazette* says: The Wisconsin Board of Medical Examiners refused to recognize the Milwaukee Medical College and School of Dentistry because it failed to comply with the State law by having all its students take three-year courses. Through a student who did take a three years' course the faculty of the college began a suit to compel recognition. The Attorney-General has given an opinion favoring the college, saying "the mere fact that some person, by unusual attention to study or by adaptability to the work, is enabled to meet the requirements of the school in less time would not operate to take the college out of permission to have its certificates recognized by the Board."

OIL OF CINNAMON.—Inhaling of this causes diminution in number and disappearance of tubercle bacilli from the sputum in phthisis, and tends to cure the disease by arresting growth of bacilli and by preventing organisms capable of growth from passing along the bronchi to infect new lobules. *Thompson.*

The tallest man in Missouri is A. G. Waite, of Waverly. He is 6 feet 8 inches out of his boots. He is one of a family of ten, the tallest of whom was 7 feet 8 inches. His smallest sister is 6 feet 3 inches tall. The Waites are relatives of the late Chief Justice Waite.

I have used lately Dr. DeTrey's solila gold, completing the whole filling with hand-pressure, with much satisfaction, but I do not have, as yet, perfect confidence. If this latter stands as well as it looks it will be a great addition to both operator's and patient's comfort, doing away almost entirely with the malleting.

Geo. C. Answorth, in Digest.

Many have slovenly and annoying habits in conversation that should be mended. A little reflection and observation of our faults will help us much. Hacking and chopping and hesitating are annoying. Repeating a fact or circumstance several times, as though that gave it prominence, weakens it. Breaking in on our friend's remarks is rude. Vehemency, demonstration and loud, high-keyed voice are vulgar. To be a good conversationalist is a great accomplishment. The qualities, habits and dominant thoughts—yes, the qualities of the very soul—are manifested by it.

During the past few months I have made great improvements in my plastic gold. There have been formerly some complaints that there was some crumbling and wasting. I have overcome that, so that now, although the gold has the same appearance, it works after annealing just like wax, and can be picked up with an instrument, and there is not the slightest crumbling of it. At the request of a large number of dentists I have also put it up in large sections, that they may cut it any shape they please. I formerly had it made up in small blocks in vials, and still do so, in addition to the new form. The main point that I wish to cover is that the fact you can pick it up shows that the interstices are not filled with a powdery precipitate, as in a great many forms of these golds, where they are close.

Dr. J. A. Steurer, in Odontological Society.

FUSIBLE ALLOY.—The following metal will melt when thrown into boiling water. It has a consistency equal to silver and can be used with satisfactory results in crown- and bridge-work, since it can be poured into impressions taken from modeling compound: Bismuth, five parts; lead, three parts, and zinc, two parts.

Dental Digest.

AMALGAM STAIN.—Some suppose that the stain of an amalgam comes from its oxydation by age. This may add to it, but there is at least nearly as much stain when first made. If the tin is burned it is sure to make black stain. But besides this, and that which cannot be avoided, is the stain of the silver.

Medico Dental Gazette.

A LOW FUSIBLE METAL.—Bismuth, 48 parts; cadmium, 13 parts; tin, 19 parts. This melts below the boiling point of water, and is very hard. It melts at so low a temperature that it can be packed with the fingers. A common plaster impression can be poured at once without waiting for it to dry.

Brit. Journ. Dental Science.

Scratches and stone-marks on mouth mirrors may be removed by polishing them on a felt wheel on the lathe; use plenty of wet pumice and plenty of pressure, but do not allow the mirror to get hot.

Perfect adhesion of gutta-percha to the walls of a cavity may be obtained by wiping out the cavity with copal-ether varnish, or chloroform.

Cement fillings ought to receive a coating of copal-ether before allowing the saliva to get to them.

The most important place a dentist fills in the community in which he lives is that of teacher. I believe that 80 per cent of the people—perhaps more—have no knowledge of the laws of hygien as applied to the oral cavity, and believing this, as I do, I desire to see dentists and physicians active in informing people in regard to this important subject. No one will question the breadth of the dentist's sphere, if I am right. If 80 per cent of the American people require instruction in oral hygien in regard to diseases of the teeth, 48,000,000 are uninformed. A glance into the oral cavity of some of our patients is enough to convince us. What can we expect when they tell us, "Why, yes; I clean my teeth always once a week; sometimes twice."

T. W. Brophy.

EDITORIAL.

TESTING THE DENTAL LAWS.

Some years ago the gentleman appointed to prosecute infringements under the dental law of New Jersey was censured by some of his fellow dentists for not pressing the conditions of the law with greater persistency against offenders.

"Gentlemen," he replied, "I am afraid to when I am beaten in the lower courts. I dare not carry the case up to a final appeal, for I doubt if the law would be sustained."

The dental law committee of the District of Columbia have recently tested their local law to their chagrin.

The gentleman prosecuted was not a nuisance by under bidding for dental work, nor a disgrace by doing inferior work. In fact he did not do the ordinary work of a dentist at all, but confined himself to a patent for an artificial denture of his own devising, which many believed showed ingenuity of design, skill of manipulation and utility of use. Though he had no license from the local society he was a student in a reputable dental college, and in his work he acted only as an assistant to reputable dentists, yet he was a registered dentist in the State from which he came.

The grievance was that he was practicing dentistry without a license from their board.

But from the above statements which we believe were conceded to be true, there seems to be extenuating and mitigating circumstances, which perhaps these gentlemen should have taken into consideration.

1. He was inoffensive. He neither interfered or came in competition with their private practice, and he neither did inferior work nor good work at inferior prices, nor in fact any work of a similar character with theirs. His work was only the construction of artificial dentures of a kind they could not make.

2. His vocation was laudable. He not only did work they could not do, but which he, and many others, claimed was superior to anything in their practice. Yet he was willing to in-

struct them in it; though he did not interfere with their practice if they did not choose to be instructed.

3. His vocation was not only laudable, but it was legitimate and lawful. The United States Government had confirmed it as such by granting him letters patent to enable him to pursue it, as against the interference of all comers. We sometimes sneer at the monopoly granted under a patent right; but perhaps there has never been any devise that has better protected, stimulated and aided to perfection new inventions. And it is a public proclamation to all men that no man or body of men must interfere with such a person in its pursuit.

4. We sometimes speak of the Constitution of our Government as a document of glittering generalities; but it is really the basis of all our laws, and not the least among its declarations is the great principle that every man shall be free to pursue his chosen vocation without interference or molestation. This is declared to be his "inalienable right," if that vocation is legitimate, and in this case it had been declared legitimate by the fact that the strong arm of the Government giving him special rights and protection. And local law, therefore, which interfered with these rights must be unconstitutional.

5. Even allowing that this man's work was a species or branch of dentistry, had he not some claim to protection and even assistance as a student at a dental college? He was there for the very purpose of perfecting himself in doing such work. Should not his very presence there given him protection in his effort? And was it not an evidence of his good faith to the profession that his intentions were honorable? He did not claim the status of a dentist in Washington, though he was a full-fledged one in his own State; and in all his work he was simply an assistant of the dentist he worked for.

I am not sure but that the jury did right in declaring his course a proper one.

And it is at least human that he should now prosecute his prosecutors for damages they have done him in business and reputation. We are informed they even procured his expulsion from the dental college he was attending and otherwise embarrassed his plans for the future.

OUR FUTURE.

When the receiver of the Wilmington Dental Manufacturing Company sold the *Items of Interest* to the Consolidated Company, I purposed to relinquish editorial work and finish a book I had well in hand, which I believed would do much good to young men of my generation. But others thought I should continue my work as editor of a dental journal, and I yielded. From the favor given my efforts since, it would seem that such a journal as I had so long edited was still needed. I thank the profession for the proof they have given in their gratifying response. Our new journal was first called *Welch's Monthly*, but this seemed hardly definite enough, so we changed it to DENTAL BRIEF. This is significant and appropriate, for it is really descriptive of what we have aimed at during the last twenty-five years, and what we still purpose,—a wise and concise summary of current dental literature. In preparing such a magazine much more time and thought is necessary than for the more pretentious journals which contain chiefly exhaustive articles, and the details of dental conventions, etc. But we believe we better please and instruct the great masses of busy dentists by thus giving them in plain and concise articles the most important thoughts, plans, devices and practices of foremost dentists.

As will be seen by this issue, and which will be seen more notably in future issues, we now enter on many improvements, though without additional cost to our readers. Heretofore we have done our best with the means at hand. The new publishers have now all that is necessary to make the BRIEF first-class in every respect, and to bring it out promptly every month.

Let us hope this will bring us a large army of new supporters. When we edited the *Items of Interest* we rather boasted of having the largest paid subscription list of all dental journals. We hope soon to say the same of the DENTAL BRIEF.

Let us remember it is not the most work we do that gives us success, but the best work, and that which gives the best satisfaction to our patrons.

DIET FOR STUDENTS.

Some advocate a full generous diet for students and few hours of study. I commenced my college course with this notion. I paid seven dollars a week that I might have an abundance of the best food, and I confined myself to eight hours of study, including lectures, clinics, etc. I took at least three hours of "recreation," and ten hours sleep. An average of three hours for eating, etc., made up the twenty-four hours. After three months' trial I was decidedly dissatisfied with my progress, and instead of a clear head, healthy digestion and bounding spirits I became drowsy, mentally lazy and dyspeptic.

Fortunately my funds gave out, and I was obliged to board myself on a scanty fare. I paid fifty cents a week for my room, light and heat, such as they were, twenty cents for washing and sundries, and thirty cents for food. For my wife kept boarders to pay expenses and could not spare more than one dollar a week for me, and sometimes not that, and then I lived on less—a roast potato and salt, a loaf of bread and an apple, oatmeal and molasses—and by thus varying my meals kept up good digestion.

My dyspepsia left me, my mind became clear, memory strong, spirits good, and without fatigue or exhaustion I could study sixteen hours a day.

I do not advocate a starving regimen, but I am confident that most students—as well as most other men and women—eat too much, and of food too rich and stimulating. Perhaps some students think it would be impossible to eat too much of such food as they generally get at a cheap boarding house, and that it is certainly not too rich and stimulating. Perhaps not, and yet it is not what a young man given up to much study can digest. I also admit that many entirely break down in an attempt to board themselves. It is too monotonous, and there is too much of a temptation to get along with insufficient food and with too great irregularity. But I rather think few of us are as likely to eat too little or to live on a too simple diet. The trouble with most of us is in the other direction.

KERNELS.

A Kansas man is the owner of a floral freak in the shape of a geranium plant that is more than twelve feet high. It grew nine feet in one season.

The hottest region on the earth is the southeastern part of Persia, where it borders the gulf. For forty consecutive days in July and August, the temperature has been known not to fall lower than 100 degrees, night or day.

Captain Perry speaks of the great distance that sound can be heard during intense cold. We often, he says, in the Arctic regions heard people converse in a common tone at a distance of a mile.

The largest library in the world is the National Library of Paris, which contains forty miles of shelves, holding 1,400,000 books. There are also 175,000 manuscripts, 300,000 maps and charts, and 150,000 coins and medals.

The largest cask in the world is the Blatner cask of Nuremberg. It is 105 feet in diameter and 51 feet deep, and its completion a few years ago was celebrated by a ball, at which over 500 persons were on the floor of the cask, excluding musicians, waiters and assistants.

The greatest bell in the world is in an edifice before the great temple of Buddha at Tokio. It weighs 1,700,000 pounds, and is four times greater than the great bell of Moscow, whose circumference at the rim is nearly sixty-eight feet, and whose height is twenty-one feet.

The air within the Mammoth Cave of Kentucky has a uniform temperature summer and winter of 54 degrees Fahr. The cave may be said to breathe twice a year, inhaling during the winter and exhaling during the summer. This breathing of the cave and the purity of the air and its freedom from germs, are among the most interesting problems to be studied. By what process the air in the cave becomes sterilized remains to be determined.

Dentistry must have become quite a "business." It requires 4,000,000 of porcelain teeth to supply its wants. The platina pins in them is worth nearly as much as the work and porcelain in them. It is estimated that dentists use yearly a ton of gold and three tons of silver and platina.

The Register of Wills dismissed the caveat filed on behalf of several heirs of Dr. Thomas W. Evans against his will, and admitted to probate the will, dated August 26th, 1896. Under this instrument the city will receive several million dollars to establish the Thomas W. Evans Museum and Dental Institute.

We have before noticed Dr. Black's "Anatomy of the Teeth," published by the S. S. White Dental Mfg. Co. We would like to add that its popularity has so far exceeded its author's original expectations that it has already attained its fourth edition. This of itself shows the appreciation by the dental profession and the teachers of our dental schools.

When you say a thing, say it and be done with it. Repeating it, modifying your phrases and covering your ideas with many and uncommon words does not strengthen them. It weakens the very thought you would express. Your hearers or readers will follow you with pleasure and profit in a plain, brief, clear statement, and they will easily remember it and reduce it to some practical use. But they refuse to hunt you up while you are dodging here and there, out and in, up and down, never stopping to tell them "where you are at" or what you want of them.

The attention of the profession is called to the following clause in the recently enacted law of New Jersey, which read as follows:

"No person shall be examined by the said Board unless he be twenty-one years of age, of good moral character, and having received a preliminary education equal to that furnished by the common schools of the State and be graduated in course with a dental degree from a dental school, college, or department of a university recognized by said Board, or, unless he shall present the written recommendation of at least five licensed dentists of this State, of five years' standing, that he is qualified for such examination, or shall hold a diploma or license conferring full right to practice dentistry in some foreign country and granted by some authority recognized by the Board."

CHANGE OF TOOTH STRUCTURE.—If Professor Black is right, I cannot see how it is that for the past eighteen years I have been deceiving myself in reference to the changes in teeth. I do not see how any man with any practice at all can conceive such an idea, because teeth certainly do change, or else my observations have been very wrong.

And the other statement, that it makes no difference what filling you use. Why, I think it makes all the difference what kind of filling is used in the teeth. Certain kinds of teeth are better preserved by combinations of filling than where a single kind of filling is adopted. It is surprising to me that Dr. Black will make such a statement. *Dr. Gilbert, in International.*

TRACKED BY HIS THUMBMARK.—An extraordinary example of the efficacy of the thumb impression method of identification happened in Bengal. Some months ago the manager of a tea garden in the Dooars was brutally murdered, the murderer getting clean away, as the crime was not discovered till some time after its commission. For some time the police were at fault till it was discovered that the murderer, in rummaging among some papers of the deceased, had smudged a Bengali atlas with his thumb. The atlas was forwarded to the Bureau, where the thumb impressions of criminals are kept, when it was discovered that the impression on the atlas corresponded with the thumb recorded of a noted criminal then at large. The man was arrested on this evidence, and other evidence subsequently accumulated to connect him with the crime.

Any of the non-cohesive foils, with one exception, which is not a pure gold foil, can be made cohesive by annealing, and all of the cohesive foils, without exception, can be made non-cohesive by exposing them to the fumes of ammonia.

The Bosworth right angle mallet is one of the nicest instruments I have in the office. You can deal a fust blow with it every time, and there is no danger of slipping. It can be used to advantage in the deeper parts of proximal cavities in bicusps and molars. You can deliver a direct blow with this instrument that you cannot with any other mallet. The same holds true in a buccal cavity. You should strive for as thorough condensation as you can get by mechanical means, with the blow as uniform as possible.

J. E. Nyman.

FOR OUR PATIENTS.

A BATTLEFIELD.

The bravest battle that ever was fought—
Shall I tell you where and when?
On the map of the world you will find it not—
It was fought by the mothers of men.

Not with cannon or battle shot,
With sword or mightier pen;
Not with wonderful word or thought
From the lips of eloquent men;

But deep in some patient woman's heart,
A woman who could not yield,
But silently, cheerfully, bore her part,
Aye, there is the battlefield.

No marshalling troop, no bivouac song,
No banners to flaunt or wave,
But, oh, their battles, they last so long—
From the cradle to the grave.

* * * * *

O woman, white in a world of shame,
With splendid and silent scorn,
Go back to God as white as you came,
The noblest warrior born.



The conjurer stepped forward to the front of the stage and said:

"Ladies and gentlemen, if there is in this audience any young man who would like to know the name of his future wife, if that young man will kindly stand up I will undertake to tell him."

Up jumped a young man in the center of the room.

"Thank you," said the conjurer. "Now, I like to do business in a proper business fashion. Will you kindly give me your name?"

"Yes, certainly," said the young man. "My name is James Jackson."

"Thank you," replied the conjurer; "then the name of your future wife will be Mrs. Jackson." *The Epworth Herald.*

HOME SCIENCE.

There are three times as many muscles in the tail of the cat as there are in the human hands and wrists.

In Australia spring begins August 20th; summer, November 20th; autumn, February 20th, and winter, May 20th.

Nearly 1,200,000 pounds of colors are used by the United States Government annually for printing paper money, revenue and postage stamps.

More eyes must be damaged or lost than most people suppose. Two million glass eyes are manufactured every year in Germany and Switzerland.

Pope Leo XIII owns a pearl left to him by his predecessor on the throne of St. Peter which is worth £20,000, and the chain of thirty-two pearls owned by the Empress Frederick is estimated at £35,000.

The most important duty of Japanese parents is to find matrimonial companions for their sons and daughters, and the non-fulfilment of this duty is regarded as a disgrace both to the young people and to the parents.

Showers of fish and frogs are tolerably well authenticated. The living creatures were probably taken from their native element by a cyclone or waterspout, were transported through the air and finally dropped with the rain.

It has been computed by geographers that if the sea were emptied of its waters and all the rivers of the earth were to pour their present floods into the vacant space, allowing nothing for evaporation, 40,000 years would be required to bring the water of the ocean up to its present level.

A bird of immense wing power is the tiny stormy petrel; it belongs to every sea, and, although so frail (apparently), it breasts the utmost fury of the storm. Skimming with incredible velocity the troughs of the waves and gliding rapidly over their snowy crests, petrels have been observed 2,000 miles from nearest land.

Dr. W. A. Mills, Baltimore: There seems to be two classes of men in the profession; one is content to stay just where they are, and the other ever strives to go forward and be better than mere dentists, as the word is commonly understood. To raise the dental profession in the eyes of the public it will be necessary that the members have that better education which will place them on a worthy professional footing. Study only will give

this, not study only while preparing for college, and while passing through college, but the habit of study that makes one a progressive student through life. When we look back twenty or thirty years at what dentistry was then, and look forward to what the same rate of progression will make it in the future, we can see that we will then be classed not only as professional men, but as scientists, and this is what we should resolve to be.

Cosmos.

ELEVEN THOUSAND EYES IN ONE.

In the course of his lecture at the London institution on "Insects at Work," F. Enock, after referring to the trapdoor and the garden spiders, spoke at some length on the leaf-cutting bee, probably the most remarkable of all bees.

The leaf-cutter, he said, had three eyes in the centre of its head (a very thick one) and two compound eyes, occupying, respectively, positions on each side of the others. In each of these compound eyes there were 11,000 reflectors, making a total of 22,000.

That appeared strange; but he had proved it to be a fact by placing a locust in the lens, and then taking a photograph of the head, which showed a locust in every reflector. The photograph referred to was shown on the screen.

Another peculiarity of this bee was that the tongue of the male was longer than that of the female; but this was counter-balanced, perhaps, by the fact that the jaw of the latter was very much stronger than that of the former.

In explanation given to the title of this bee, it was explained that its habit was first to burrow in a sand bank making a sort of tube for its nest. Next the intelligent creature—which was really a capital architect—would proceed to a rose tree. It would there alight upon one of the leaves, and with the tools with which it worked, would cut a round piece out of it. This it would carry to its nest, and ram it against the extreme top end. Then it would take an oblong piece, which it used to commence the side of a cell with; and so it would go on until it had constructed twelve cells, in each of which it would deposit its collections from the Canterbury bell, of which it was very fond, and other flowers. An egg was laid in each of these cells, and in due time young bees appeared, and in their turn escaped from the cells and flew about, to carry on the same kind of work.

PRACTICAL POWERS OF TELESCOPES.

In a recent address, the director of the Yerkes observatory, Prof. George E. Hale, remarks that for double star observations, with the largest telescope and under the most perfect conditions, powers as high as 3,700 diameters have occasionally been used. But in regular work it is not a common thing to exceed 2,700 diameters. Under very exceptional circumstances the moon might perhaps be well seen when magnified 2,000 diameters, but this would be an extreme case, and in general a much better view could be had with powers ranging from 500 to 1,000. Jupiter can rarely be well seen with a power greater than four or five hundred, though Saturn will stand considerably higher magnification. Mars is best seen with a power of five or six hundred.

With small telescopes lower powers are generally used. The difficulty is not in finding optical means to increase the magnification, as some of the newspaper writers seem to imagine. It is rather a question of being able to see anything but a confused luminous object after the high eye-pieces have been applied. The variably disturbed condition of the earth's atmosphere is mainly responsible for this.

It is particularly in astrophysical research that a great telescope is advantageous. For the principal instrument of the astrophysicist, the spectroscope, it is necessary to have as much light as can be gathered into a single point. *Science.*

THE EFFECTS OF TIGHT LACING.—I. The normal breathing of woman is like that of man, abdominal; tight lacing changes the type to costal.

2. The pelvic organs normally make a considerable excursion with each respiration. Tight lacing in the upright position checks this motion almost entirely.

3. Sitting or leaning forward lessens intra-abdominal pressure. Tight lacing in these positions greatly increases intra-abdominal pressure.

4. The uterus is displaced downward by tight lacing from an inch to two inches and a half. The pelvic floor is bulged downward and the circulation rendered sluggish.

5. Uterine development is greatest from the twelfth to the sixteenth year. Tight lacing is usually begun at this, the period of the beginning of uterine development.

Dr. W. E. Fitch, in Medical Monthly.

THE INOCULATION CURE.

First they pumped him full of virus from some mediocre cow,
 Lest the small-pox might assail him, and leave pit-marks on his brow;
 Then one day a bulldog bit him—he was gunning down at Quogue—
 And they filled his veins in Paris with an extract of mad dog;
 Then he caught tuberculosis, so they took him to Berlin,
 And injected half a gallon of bacilli into him;
 Well, his friends were all delighted at the quickness of the cure,
 Till he caught the typhoid fever, and a speedy death was sure;
 Then the doctors with some sewage did inoculate a hen,
 And injected half its gastric juice into his abdomen;
 But soon as he recovered, as of course he had to do,
 There came along a rattlesnake and bit his thumb in two;
 Once again his veins were opened to receive about a gill
 Of some serpentine solution with the venom in it still;
 To prepare him for a voyage in an Asiatic sea,
 New blood was pumped into him from a leprous old Chinese;
 Soon his appetite had vanished, and he could not eat at all,
 So the virus of dyspepsia was injected in the fall;
 But his blood was so diluted by the remedies he'd taken,
 One day he laid him down and died, and never did awaken;
 With the Brown-Séquard elixir though they tried resuscitation,
 He never showed a symptom of reviving animation;
 Yet his doctor still could save him (he persistently maintains),
 If he only could inject a little life into his veins. —Puck.

 "GROWING RIGHT."

S. D. Marsh.

We are growing out, or growing in,
 We're growing in goodness, or in sin.
 We're growing upward, or growing down,
 Whiche'er we will to shame or renown!
 We are growing right, or growing wrong,
 We stand not idle often, or long!
 The way's before; the right or the left,
 'Tis ours to choose the worst, or the best,
 'Tis easy to choose when days are all bright,
 The hills all clothed with verdure and light,
 It needs the furnace, to temper the blade,
 In conflict with wrong are heroes made!
 Growing in goodness, is growing in peace,
 As life grows short, will triumphs increase.
 With face to the right, scorning the wrong,
 Let's be doing while active and strong,
 "Gird on the armor—eyes to the right!"
 "Charge!" See, evil has vanished from sight!

USEFUL HINTS.

Small Japanese toothpicks are excellent for wrapping on cotton to use for iodine, aconite and glycerin for the gums, as they are inexpensive and can be thrown away in each case.

Peroxide of hydrogen is good for cuts, burns, etc., and will heal in forty-eight hours, and take out all soreness.

Bicarbonate of soda will remove all iodine stains, and cause all burning to cease in carbolic acid burns.

Being domestic as well as a dentist I find a pinch of bicarbonate of soda good in cooking vegetables. In cooking peas, beans, etc., it will take less time to cook them and will cause them to retain their green color.

Dr. Lu Ella Cool, San Francisco.

WARTS.—Regarding these unsightly excrescences, a Paris correspondent says: It is now fairly established that the common wart can be easily removed by small doses of sulfate of magnesia taken internally. M. Colrat, of Lyons, states, "Several children treated with three-grain doses of Epsom salts, morning and evening, were promptly cured." M. Aubert cites the case of a woman whose face was disfigured by warts, and who was cured in a month by one and a half dram doses of magnesia taken daily. Another medical man reports a case of very large warts which disappeared in a fortnight from the daily administration of ten grains of the salts.

Practical Druggist.

SEEING STARS.—If a man falls so as to strike his head violently, or if he gets a blow over his eye, he is said to "see stars." The cause of this curious phenomenon is found in a peculiarity of the optic nerve. The function of that nerve is to convey to the brain the impression of light. It recognizes nothing but light. It is susceptible to no other impression; or, if acted on by any other agent, it communicates to the brain the intelligence of the presence of that agent by sending along its fiber flashes of light only. Irritate this nerve with a probe or other instrument, and it conveys no sensation of pain, but simply that of luminous sparks. The pain of the blow on the eye or the fall on the head is realized through the nerves of general sensation; but, insusceptible to pain or any other feeling, the optic nerve sends to the brain its report of the shock by flashes, sparks and "stars."

Family Doctor.

ABOUT A MILE DOWN.

The newest wonder in American engineering has just been inaugurated at Houghton, Mich., viz., the Red Jacket shaft of the Calumet and Hecla—the greatest mining shaft in the entire world. It is 4,900 feet deep, and, compared with it, the deep silver mines of the Comstock lode in Nevada, or the wonderful mines of Austria, worked for many centuries past, are but shallow pits.

There are six compartments, each equal in size to an ordinary mining shaft, four of these being used for hoisting rock and lowering timber, one is used for the ladderways, and the sixth and last compartment carries the wires and pipes for telephones, light, power, water and compressed air. The underground workings of the shaft are laid out with mathematical accuracy, the un-deviating course of the copper bearing lode allowing work to be planned thousands of feet ahead of the mineral picks. The great pumps which free the mine of water are operated interchangeably by compressed air and electricity.

The power drills which eat the holes for the dynamite cart-ridges are run by compressed air alone, and there are more than three hundred of these drills, each doing the work of a dozen men, working both day and night, in the Calumet and Hecla mine.

Sun.



TO DRIVE A NEEDLE THROUGH A COPPER COIN.—“An apparent mechanical impossibility may be accomplished by simple means, using a copper cent and a cork, with a common cambric needle, as accessories,” writes magician Harry Kellar, describing “How I Do My Tricks,” in the November *Ladies' Home Journal*. “Announce that you will drive a small needle through a coin, and few will be ready to accept your statement, yet it is very simple, and any one can do it. Take a copper coin, place it upon two small blocks of wood, leaving a very narrow open space between the blocks. Now, having selected a good, sound cork, force the needle through it till the point just appears at the other end. Break off the portion of the head of the needle showing above the top of the cork. Place the cork on the coin and strike it a fair, smart blow with a hammer. The needle will be driven entirely through the penny by a single blow.”

DENTAL BRIEF.

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ORIGINAL COMMUNICATIONS.

DENTISTRY IN BURMAH.

Dr. S. W. Bonwill, Rangoon.

Now, my dear readers, I am going to try to give you somewhat of an idea of my dental practice here, a little about the natives, the Europeans, climate, etc., of Burmah. It may be interesting to those who have never seen any of the Eastern countries. I am not in the habit of writing articles for publication, so you must not criticize my style too harshly.

In Rangoon we have almost every nationality under the sun. Even some Spanish, so if ever you hear of a terrible battle between the Spanish and an American in Rangoon you will know that it is your humble servant having a go at them. But I think the half dozen here will keep quiet, for Manila was quite enough for them. People at home, in America, think we have a most lovely time in the East. Up through China and Japan the climate is really very fine, and it is much more pleasant to live there than in the tropics. I have been all over the East, so know it pretty thoroughly, and I assure you had I had the experience before I left America, that I have now of the tropics, I would have done as Smith's bad little boy did, "he stuck his thumb up to his nose and spread his fingers wide," and told the Eastern countries to kindly stay where they are, for America was good enough for me. But it is too late to cry over spilt milk. When first I came to Rangoon I really could not tell a man from a woman. They all dress alike, look alike, the men even wear their hair long and done up on top of their heads. Some of them are very pretty. They are of olive complexion and dress in the most beautiful colored silks, hung loose. They go bare footed, with the exception of a few of the rich men and women, who wear a sort of sandal which they hold on by a strap over the big toe. The women and girls have most beautiful black hair, and they say it is due to the use, from birth, of cocoanut oil; I quite believe it makes the hair grow, for

if smell has anything to do with it, their hair should grow to be five yards long. Women attend to business and trading, also plant all the rice, etc., while the men sleep. This of course is with the common class. Very often you will find a white man with a Burmese wife. This man is soon rich, for he will give his wife so much of his wages every month and she will start buying and trading and she gives her husband all the profits. When a rich Burman comes to my office for a full upper denture he will say (in Burmese) "how much you want?" Then, if you want to get rupees 200 for the case, you must say, "Well, Mg Ohn Ghine (his name), if you send me other rich men I will do it for you cheap; give me rupees 500. Before he gets through with you he has got you down to 200 which, of course, is the price you want. The native is perfectly satisfied for he thinks he has gotten it cheap. My dental practice consists chiefly of Europeans. This is really a thoroughly Scotch settlement. A patient came in with two old roots to be extracted, and said that a dentist had broken them off and then could not extract them. I would take them out for them, and the very next time they wanted something done on their teeth, they would go back to the old dentist. This is the way with all Scotch, no matter what kind of work they get done they will always stick to the first man. I have the practice of Burmah now, but it has been an awful fight. Many have been here before me and a few since, but all failed.

The climate here is very hot all the year round, always from 150 to 180 degrees in the sun, and in my office I have it month in and month out 107 to 120 degrees. You cannot imagine what it is to work hard all day in such a climate, I am obliged to have in my office, with fans, three natives to fan the patient and myself. At night, while we sleep, the large punkah or fan hung from the ceiling over our bed is kept going all the time. The way a night man pulls the punkah is, he rests his back against the wall, fastens the rope between his toes, and pulls it with his leg and foot while he sleeps half the night. Just think how nice and cool you keep while soldering a big gold case. We have only two seasons here, and they are the wet and the dry. The wet season starts as regular as clock work on May 1st and lasts until October 30th, during this time it rains in torrents night and day, and if at any time the rain stops for a few hours we are really most happy. But the wet weather does not bother us much, we get so accustomed to it, we drive, ride and have our race meetings just the same. During this wet season we have hurdle and cross country riding twice each week, and this is really the only enjoyment I have. By the

time I am through my office work I am not fit for anything. The dry season lasts from November to May, and during this period it is nothing but sunshine, never see a cloud in the sky. Well, this is the hottest time of the year; the simple little word hot is not the word for it. Most of the business is done here during this dry season and all the gold filling. In our wet weather it is almost impossible to do gold filling unless it is kept dry with napkins, etc. The houses in all the tropics have no windows, only shutters which are closed at night and during the middle of the day to keep out the heat. From 11 A. M. till about 2 P. M. all places of business are closed, and everybody goes home to lie down and keep as cool as possible. A very funny thing occurred a few days ago, an old Burmese woman came to my office and said she wanted a plate made with only one tooth on it, right in front. I looked at her mouth and saw she had not a tooth in her mouth. I am by no means a scholar in Burmese, so I surely thought I had misunderstood her. I thought she wanted a full upper and lower denture, but my Burmese servant said, "No, master, you wrong, she says she only wants one tooth in the front as she is very poor and cannot afford to have any more, and that she is going to get married and she wants to look nice. She was only 62. I could relate quite a number of little incidents which occur daily in my practice, but if I did so I am afraid I would take up too much space of the BRIEF. Gold plate and all soldering with the metals is very hard to do here. We have no gas, and therefore have to make use of the old-fashioned blow-pipe and flame from an oil lamp; also, as I have previously stated, being no windows in the houses, the draft is very strong and cools the plate as fast as it is heated. This is exceedingly trying, especially when the perspiration is pouring off of you as fast as it rains.

I have two Burmese assistants to help me in the office. One cleans my instruments as fast as I use them, the other runs my engine. My office always looks very nice; this being the tropics, of course we have flowers all the year round. People while waiting are always walking round looking at the plants, flowers, the trees in bloom all about the house and my ground, and it really is a most excellent thing to get them quieted down. In front of my door, where my chair stands, is a veranda, and upon it are hundreds of the most beautiful foliage plants, which are really only the product of the tropics. During the hot weather many of the people have gone to Dargeling and Simila, which are located in the mountains of Northern India, where the climate

is lovely, but a year ago the Government of Burmah started a very nice resort in the mountains of Tonngoo called Thanng-down (Burmese word meaning big mountain), 4,900 feet above sea level. It is lovely to get a little fresh air, something impossible to get elsewhere. Then for a man there is plenty of game, tiger, black panther, deer, wild boars and all kinds of birds. Now, my dear readers, don't think that these animals will come to your very door and eat you. When we want to get them we must put out a calf or goat, tied to a tree, then make a seat up the tree and wait sometimes all the night up on that high perch to get a tiger or a panther. We hear them at night in the jungle, but unless you are by yourself there is no danger. I must tell you how we get to Thanngdown. We leave Rangoon on the 5.30 P. M. train, arrive Tonngoo 1.15 A. M., then we cross the river on flat barges, with our servants and provisions, and travel eighteen miles in bullock carts and ponies to the bottom of the mountains. From here we ascend eleven miles up the mountain, either walk or ride a pony about twelve hands three inches high, or carried on elephants, or in chairs strapped on the backs of the Shans (mountain Burmese men). The women carry all provisions, etc., on their back, to the top of the mountain. It is delightful when once there, but somewhat of a tiring journey. We get there about 10 P. M.

Speaking of the steam car service here. I would like to have a Chestnut street trolley car to race with them, you would not see the train for dust. In coming down the mountain it is the same reversed. Mandalay, where the old King Theba lived before the annexation, is nearly as large as Rangoon, and to this place we often have to go professionally, twice a year, sometimes three times, and remain about two weeks. It is 385 miles from Rangoon, train takes twenty hours, but a most lovely trip is to go there by steamboats, which take two weeks to go and ten days to come down. Of course one must have the time to spare for this trip. Maulmein is the other place in Burmah which I have to visit three times each year. This is a very small place, and I always dread going there for accommodations are frightful. But as a rule there is plenty of money to be made there, so that makes up for the numerous inconveniences. Bassine is a place I have been to only twice in three years. It is a great trouble to have to pack up all your instruments, both mechanical and operative, and cart about also a heavy chair, but the two first named towns I must go regularly, for people cannot leave their work to come to Rangoon.

I hope before long to have my office, laboratory and house completely fitted out with electricity, and I expect the natives will surely think the world has come to an end when I will be able to light a lamp by pressing a button or running my lathes and engine by moving a switch with my foot. When I first got out my four-wheeled buggy with rubber tires from New York, they thought it surely belonged to the old boy; I have had two hundred in front of my house to see me start. For a long time they could not make out why it made no noise.

The Royal Lakes here are very beautiful. In the dry season the upper class, especially, take their afternoon drives and then wind up by driving to stand at the lakes, where we meet our friends and listen to the military band which plays nearly every day, Sunday included. Sunday in the East is not a very well kept day religiously. All the bars are opened, the native stores, tennis and other sports are played. Sunday being the only day a European is not at work. Here we are at work from 6 A. M., myself included, until 11 A. M., then go home to get out of the heat and rest, return to work 2 P. M. and work until 5 P. M., so you see Sunday is really the only day we get for recreation. Now I think I have taken up quite enough space, so I will lay down my pen for the present. But if my readers would like any more about Burmah I will try my best to write something which will be of more interest to you all next time.

THE PROSECUTION OF A DENTAL STUDENT.

In a somewhat remote district of one of our Southern States lives a widow on her little farm, the only means of her subsistence. She has only one child to cheer life's pathway as she nears its end. This child is a man now, and the pride of his mother's heart, loved and respected by all his neighbors. In this mother's heart was a hope, a longing desire, that he would not have to toil thus with little recompense through life. As he worked so willingly and strived so diligently to provide for his mother and make life pleasant to her, it only made her the more sad that his energetic spirit should be thus hampered.

The young man was not entirely devoid of education. He had till the past few years attended the public school, and was an apt scholar. He had often expressed a desire to enter some profession, and his aptness, perhaps genius, told him what profession he should enter. His mother and friends thought he would

make a success if only he had an opportunity. Finally they decided that he must attend a dental college, and by dint of hard work, much worry and mortgaging the farm, he and his mother raised enough money to pay expenses for one session. He left home with jubilant spirits, little dreaming of an arbitrary law that would crush him. He did well at college. After he returned home during vacation, on the advice of his friends, he began to work at his profession. It required little persuasion for him to do so; for had he not heard the oldest students tell how much they had earned during the previous vacation, and how their patients were pleased with their work? Some of them showed letters addressed boldly Doctor—which were from their patients who wanted to know how soon the doctor would complete his post-graduate course. He had heard of the laws preventing students practicing dentistry; but, look what the other boys had been doing? some of them even worked their way through the last term of college, and were able to get their diplomas because of their activity during the vacations. Besides he remembered having read something in the back part of his school history that ran thus: "We hold these truths to be self evident * * * that among these are life, liberty, and the pursuit of happiness."

The seat of this county is a flourishing town several miles from this young man's home. There were two or three prosperous dentists located there. Reports of his practicing soon began to come in and perhaps specimens of his work. One of them—whether with the connivance of the others we know not—reported him to the President of the Examining Board (oh! how honorable that sounds!), and he caused the prosecuting attorney to indict and prosecute the aspiring young doctor. He was convicted and fined one hundred dollars. Where he was to get the money he knew not. But his friends were not inactive. They knew what was going on, and with amazement, which soon turned into anger, they chipped in, paid the fine, took the young man home, and told him to go to work again; which he did. Then they sent word to the doctor and attorney that if they meddled with that boy again they would court bodily injury, and if they attempted to arrest him again they would have to arrest the whole community. How often has instinct come to the rescue of oppressed nations, communities and individuals, and shown them the right above the law. The doctor who caused the prosecution lost many patients, some of whom were not even personally acquainted with the young man, but they went to another city for their work.

FILLING WITH GOLD.

Dr. H. C. Cahlo, Indianapolis.

The enamel rods of a tooth radiate outwardly on all convex surfaces of the teeth, and inwardly—that is to say, toward the dentine—on all concave surfaces. This is a valuable point to be borne in mind in the preparation of cavity walls. If unheeded, the result will almost invariably be fracture and subsequent dissolution of these enamel rods, and, as a consequence, reappearance of decay. Another feature is the necessity of having these cavity margins sustained by dentine. Many of us have too often fallen into error in the preparation of cavity margins by the all-absorbing interest in the retention of our fillings, failing to trim away the margin sufficiently for fear of destroying the natural undercuts which the walls present. If experience has taught me one lesson more thoroughly than any other in the practice of dentistry, it is the desirability of having thick, well-sustained cavity margins. Cavities in the approximal surfaces of bicuspid and molars should be freely opened up in this manner for the additional reason that by so doing we cut beyond the points of contact with the adjacent tooth, and thereby spare ourselves the annoyance of the re-establishment of decay, which would otherwise often occur at these points.

Generally, my aim is to have the cavity walls as nearly parallel as possible, radiating outwardly at an angle of 15 degrees, on all approximal surfaces and perpendicular on masticating surfaces. Usually these margins can be perfectly prepared by the use of sharp chisels.

We all realize the importance of removing all signs of decay from within cavities so far as is practicable for the safety of the underlying nerve.

We must have anchorage as near as possible in the line of greatest resistance. We must guard against weakening the margins. We must not destroy or impair the source of nutriment. It is evident, therefore, that it is much easier to tell where not to place undercuts than where to place them.

Fortunately, Nature generally comes to our rescue in the natural anchorage which cavities present. Of the others, we can usually decide on a means if we are mindful of the dangers. I am particularly opposed to the custom, resorted to more in the past than in the present, of the cutting deep pits or a deep groove along the cervical surface of cavities. It is usually painful to the patient and certainly greatly interferes with the normal nutrition of the tooth-crown.

Many cavities are naturally undercut, but without the use of a matrix, great difficulty is experienced in the starting of filling and building them up to a point where the natural undercuts exist. Especially those in distal surfaces of teeth, I use a matrix (usually a Guilford matrix), but before securing it in position I place one or two pellets of gold along the cervical margin, allowing them to overhang so that when the matrix is pushed up into position and clamped, these pellets are firmly secured. In this way I have a perfect starting-point for my filling, in addition to the assurance that my cervical margin is well covered. Where it can be done, it is a good practice to flatten a large pellet which will cover the cervix and side walls both, binding it in place with the matrix.

In these I use pellets of semi-cohesive gold, unannealed at first, but annealing after the foundation of metal has been laid.

I have learned to place much reliance on firm and adequate anchorage in the masticating surfaces of all teeth which contain approximal cavities of a size which justify the opening to that surface, and nearly all do. With a natural anchorage in the approximal surface and a strong artificial one on the masticating surface, there is little chance of failure from this cause.

Another advantage in the use of matrices is that they dispense with much annoyance and labor incident to finishing.

Where gold is thoroughly malleted against the wall of a matrix which is secure, and afterward burnished, it requires very little finishing with strips and discs. Nor do I mean to confine the utility of matrices in connection with gold as a filling material. In the filling of large approximal cavities with amalgam, their application is entirely satisfactory in enabling us to pack our material more solidly and in giving it a desirable contour. In such cavities, too, especially in devitalized teeth, we often find considerable difficulty in obtaining sufficient anchorage.

Where I consider it more practicable to fill than to crown, I nearly always resort to a very convenient set of anchor-screw appliances made by the S. S. White Manufacturing Company.

By their use it is possible to establish, in a few moments, an anchorage in one or two roots such as will enable you to build a surprisingly large and secure filling over.

The last, but by no means the least, important function in the correct insertion of permanent fillings is the finishing.

Here I want to lay special emphasis on thorough burnishing, claiming for it hardness of surface and fineness of finish in direct proportion to the thoroughness of its application. It is very

difficult to fill a cavity, especially with gold, so that all the particles along its surface are firmly and perfectly welded.

Burnishing enables us to perfect where the mallet has failed, especially along the cavity margins. My custom is to fill cavities a little more than full, allowing for condensation as the result of burnishing. Following this comes the use of approximal trimmers, strips and discs, till the filling is reduced to a point where it is flush with the cavity margins.

As a precautionary measure, the points of union between cavity margin and filling should be gone over with an explorer to be sure there are no overhanging edges.

RECENT PATENTS RELATING TO DENTISTRY.

603731, Tooth-powder box, Charles Millington, Clifford, England.

603803, Dental impression material, Louise L. White, San Francisco, Cal.

604355, Dental disk-mandrel, James E. Keefe, Chicago, Ill.

604363, Artificial tooth for crown- and bridge-work, Francis N. Brown, Chicago, Ill.

604692, Fountain spittoon, Theodore N. Clark, Toronto, Canada.

604562, Disinfecting apparatus, James Evetts, assignor to Red Cross Hygienic Company, Chicago, Ill.

604836, Dental engine, Arthur J. McDonald, Kansas City, Mo.

604837, Dental engine, Arthur J. McDonald, Kansas City, Mo.

604890, Rubber-dam holder, William M. Seeger, Louisville, Ky.

605171, Dental plugger, Francis S. Avil, Philadelphia, Pa.

605403, Dental bridge-work, Charles A. Davis, Pasadena, and E. L. Townsend, Los Angeles, Cal., said Townsend assignor to said Davis.

605223, Apparatus for swaging dental plates, John H. Gartrell, Penzance, England.

605255, Dental chair, Mont C. Merker, Philadelphia, Pa.

John A. Saul, Solicitor of Patents.

TO DESTROY PLANT LICE.—Salicylic acid, 1 p.; soft soap, 2 p.; tincture of quassia, 50 p., and tincture of colocynth, 5 p.

DR. BONWILL says:—Let any of you hurt a finger, and how soon it is put in the mouth, and a violent inhalation taken several times, till the pain is relieved. The infant in crying violently while in pain, from an accident, is relieved and falls to sleep from the constant sobbing and increased inspiration. All temporary teeth I extract by this method in one sudden inhalation or diversion of the will, and not a tear or complaint. Two or three teeth can be extracted while the breath is held in the lungs. You know now why I abandoned electricity for obtunding sensitive dentin and extracting, for this revelation of how nature relieves. All this cataphoresis in dentin is only the work of the current pure and simple, and while I can annul pain in a few minutes by the current, I will not fool with it, as by my present mode of practice it is no longer worthy of my notice, and could you follow me day by day at the chair, you would adopt the means which would not rob you or your patient of that which neither can ever replace or have paid for remuneratively. I hold that it is all nonsense for you to practice deluding yourselves and robbing the public of valuable time, which, unless you get paid for every minute in the application of electricity by cataphoresis, you are a loser also.

The driving of light engines or carriages by means of liquefied carbonic acid as a motive power has been often proposed, the difficulty chiefly encountered being the great absorption of heat, and consequently loss of efficiency through the refrigeration of the engine, as the liquid expands and returns to the gaseous state. The latest method brought forward for avoiding this difficulty, says the *New York Sun*, is due to the ingenuity of a French inventor, M. Rassimier, his method being to press the carbonic acid through capillary tubes in a chamber heated to 248 degrees F. by petroleum or coal briquettes, the heated gas being then admitted to the engine cylinder, where it acts upon the piston, and is then led into a chamber or jacket surrounding the liquefied gas. The gaseous acid giving up the necessary heat to change the liquid acid to the gaseous form of 30 degrees C., a pressure of 75 atmospheres is finally developed. The final exhaust of the gas takes place from the jacket or chamber. The statement is, in substance, that the capillary heater insures the first expansion of the gas, while the addition of pressure through the heating of the reservoir by the exhaust gas takes place only when the engine is working.

TREATMENT AND FILLING OF ROOT-CANALS.

It is true that in touching on this subject I may be accused of "harping on a mouldered string," but I feel it my duty to make known my success in this line, trusting that it may be of use to some one of my brethren in the profession, inasmuch as their successes told in the BRIEF have been of use to me.

In treatment of a dead and putrescent pulp I enlarge the opening into the pulp chamber, then open as far as possible the root-canals. I then inject into pulp chamber a little weak solution of sulfuric acid, followed by a solution of bicarbonate of soda. This effervesces and brings with it all the debris. This may be repeated till all is out. Now wash out with a 50 per cent solution of borolyptol or some other antiseptic solution and warm water, and dry thoroughly with cotton shreds wound on a broach. Pack the root-canals with a paste made of iodoform and oil of eucalyptus, working it thoroughly in with a blunt broach. (The eucalyptus completely deodorizes the iodoform.) I then seal up with sandarac, and dismiss the patient. After four or five days I open, and with a hot-air syring dry out thoroughly, and insert gutta-percha cones dipt in thin chloro-percha, and press to place. This is covered with a thin layer of cement and the cavity filled with amalgam or gold.

I have followed this course of treatment for four years, and do not recollect but three or four cases of failure in more than two hundred treatments.

T. A. Campbell, D.D.S., Dental Dept. Howard University.

BE GOOD TO YOURSELF.

Think deliberately of the house you live in—your body. Make up your mind firmly not to abuse it. Eat nothing that will hurt it. Wear nothing that distorts or pains it. Do not overload it with victuals or drink or work. Give yourself regular and abundant sleep. Keep your body warmly clad. Do not take cold; guard yourself against it. If you feel the first symptoms, give yourself heroic treatment. Get into a fine glow of heat by exercise. This is the only body you will have in this world. Study deeply and diligently the structure of it, the laws that govern it, the pains and penalty that will surely follow a violation of every law of life and health.

CURRENT THOUGHTS.

CARBONIZED COTTON FOR FILLING ROOTS.

Dr. Elof Förberg Stockholm.

After years of experimentations to modify cotton in a way to make it insoluble and non-decomposing, I finally obtained in the carbonized cotton the material which I was searching for. Carbonized cotton differs in many respects from the hitherto known modifications of carbon. This porous, soft and flexible carbon, by itself a disinfectant, is also an excellent antiseptic, owing to the addition of anhydrous boracic acid, with which every fiber of it is impregnated.

The carbonized cotton was used by me first in the filling of root-canals. All difficulties arising on account of its brittleness and black color were reduced to a minimum after a short time, so that I can say it is excellent for various purposes. The capability of carbon to absorb gases and liquids is of importance in the filling of root-canals. All septic masses which may appear in spite of careful treatment are readily taken up by it and made harmless. Carbonized cotton is entirely aseptic and can be brought to a red heat before use. It may be introduced in the canals as such, or combined with any good antiseptic. No irritation ever results within the tooth nor on the surrounding parts. People who use powdered carbon or charcoal as tooth powder have carried little particles of it in the gums for a long time, not being harmed by it. I myself have filled the abscess sacs at the apex of teeth through the apical foramen with the cotton, giving no pain whatever, and in only one case it was gradually pushed out through the fistula without inconvenience to the patient.

Carbonized cotton does not decompose nor is it soluble; this is an important quality. It often happens that teeth whose root-canals have been filled with cements or pastes cause trouble because these materials were washed out after a time. It also can be easily handled. It is black, disagreeable, but it does not cause any discoloration of the teeth, and if the fillings are not extended beyond the gum-line, especially, nothing can be said against it. Discoloration of pulpless teeth is in my opinion caused only by defective treatment. The usual care has to be observed in treatment of the canals before filling. My method differs from others in that (1) I make it a point to wash the canals thoroughly with

a fine syringe alternately pumping and sucking the liquid, and (2) that I use sulphuric ether.

Dr. Callahan proposed to make the finest canals accessible with a 25-30 per cent solution of sulphuric acid, but for the last fifteen years I have used the ether, which was recommended by Dr. Herbst as an obtundent for sensitive dentine. This is prepared in the following way: Some drops of concentrated sulphuric acid are put in a clean bottle, then the ether is added, stirring constantly with a glass rod till the acid is saturated. Any surplus of the ether is evaporated by the chip-blower. This chemical compound is very useful in opening narrow canals; it is a good obtundent and an excellent antiseptic. A fine-pointed syringe brings it up in the canals, or long-beaked tweezers can be used. Dip the latter in the ether, push up as far as possible and open a little; the ether will adhere to the walls by capillary attraction. With a nerve broach the canals are then well cleaned, the treatment is repeated and the ether evaporated by hot air. There is no danger whatever in the use of the sulphuric ether; if too concentrated its action can be controlled by a solution of bicarbonate. I even used it in pyorrhea till I found better results in the silver salts, itrol and actrol. Nearly all canals can be filled immediately after the application of the ether, but in blind abscesses a temporary filling (for instance Dr. Forssman's formalin cement), is advisable.

After the thorough preparation of the canals the carbonized cotton is introduced. To facilitate the work, the cotton may be moistened with alcohol, or five per cent solution of carbolic acid; in periodontitis or gangrenous pulps a 10-20 per cent solution of formalin, with or without eugenol, is better.

My method of introduction is the following: A piece of the cotton is taken up with long-beaked tweezers and brought to a glow over an alcohol flame, then dipped in above named solutions and carried up in the canals with a root-canal filler, with a zigzag side movement, which prevents the cotton from slipping. The instrument must be blunt and as large in size as the canal allows. Every piece is to be condensed, and larger instruments can be used farther from the apex. With a piece of spunk the whole mass is pressed in as soon as the canals are flush.

The carbonized cotton does not roll together or stop up the canals as readily as the common cotton. Should that happen, however, it can be remedied with a probe. In piercing the cotton with the latter it is pulverized and carried up to the apex. It can be pressed in the narrowest fissures and canals, even in such

where one's finest instruments do not go. Any surplus is taken off and the cavity well syringed or washed out with cotton saturated in alcohol. The filling is again condensed with cotton or bibulous paper and any moisture taken out with hot air. Perfect dryness makes the cotton much more valuable. The cavity is now to be excavated and any filling can be inserted directly on the cotton. It is of the greatest importance to close root-canal fillings as well as pulp cappings hermetically. Gold and tin, or both together, are the best, but if it is necessary to insert cement or amalgam fillings it is wise to cover the bottom of the cavity with gutta-percha. In front teeth, where the anterior walls are thin, I always line with gold to give the tooth a natural appearance.

The carbonized cotton is the best filling material for root-canals of temporary teeth. It can be easily worked in the wide canals, does not irritate, and the saliva cannot change its quality. * * * As a non-conductor it can be used with advantage under metal fillings. * * * As a hemostatic it is excellent. While the common cotton decomposes and often causes secondary hemorrhage in attempting to remove it from the wound, the carbonized cotton does not irritate the tissue. Of course it has to be handled more carefully to prevent it from pulverizing. But if wound around common cotton and saturated with an antiseptic it works well. * * * It makes an ideal pulp-capper with some antiseptics dissolved in alcohol.

Together with a solution of twenty per cent formalin and eugenol it is the best material after pulp amputations. Those particles of the pulp left after the amputation, the canals being inaccessible or the patient too nervous to remove everything, do not retain their vitality long. Above mixture devitalizes them quickly and keeps them entirely aseptic. In such cases the rubber-dam has to be put on. If there is any pain it soon passes off. This preparation excels Dr. Miller's bichlorid thymol paste, which also discolors the teeth. Formalin, as is well known, is nice to harden anatomical preparations, preserving their natural color at the same time. This property makes it a good mummifying agent. The carbonized cotton being worked in the canals carries the formaldehyde in the canaliculi and stores it up there as a permanent antiseptic and coagulant.

In blind abscesses I have been able to bring a cure in a short time with the carbonized cotton method. I believe, therefore, I can well recommend it as one of the most effective and surest weapons in our efforts to fight the different diseases of the teeth.

American Dental Weekly.

AMALGAM FILLING.

DISCUSSION.

Dr. Black: There should be no difference in the care used between the preparation of cavities for amalgam and for gold. The same care, and generally the same forms, should be used. The same care in seating the filling, giving it a broad, flat seat on which it may support the stress that may be brought on the filling, and giving it sufficient anchorage so that the dipping strain may not move the filling from its position. There is also much in the manner of inserting the filling; the mode of manipulation makes much difference as to the strength of the amalgam after the filling is made. We may have too much mercury in our mass and our filling will be weak; again, we may have too little mercury in our mass and our filling will be weak. Just about a proper proportion is necessary and that varies with the alloy used. All of these things come in in making what is termed personal equation. There is one thing, however, that personal equation will not affect, and that is the physical characters of the material. They will remain the same who ever manipulates it. An alloy that shrinks cannot be so manipulated as not to shrink. An amalgam that expands cannot be so manipulated that it will not expand. This is a physical property of the material and cannot be changed by any method of manipulation. Other features, however, do become personal factors. Close packing is important, and generally it requires much force to pack amalgam properly, and requires an amalgam of proper physical properties that it may be packed perfectly.

Dr. J. N. Crouse, of Chicago: The fact is, that with most of the alloys on the market the more you try to pack them perfectly the worse kind of a filling you get. It is impossible to pack the soft amalgams and make perfect margins. I have had the opportunity of collecting specimens from various offices throughout the country, and the amalgams that were used the most could be the least relied on. With many of them you can make the best filling simply with your finger. Most of them shrink. Any man who watches these things will be very indignant at seeing what the practitioners of this country have been using as filling material. I say that the quality of the alloys accounts for the failures, and I only wonder that amalgam fillings do not look worse than they do.

Dr. C. N. Johnson, of Chicago: The majority of alloys on the market to-day cannot, by any method of manipulation, be

made into perfect fillings. It is undoubtedly true that a careful operator will do much better and more satisfactory work with amalgam than a poor operator, but we cannot change by manipulation the intrinsic qualities that lie in most amalgams. And in regard to filling the cervical third of the approximate surface of a cavity in a molar or bicuspid with amalgam and completing the filling with gold. So far as the element of labor and the difficulty of the operation is concerned, I would rather fill that cavity with gold than to fill it part way with amalgam and complete it with gold. I can do it with less trouble to myself. The perfect manipulation of a high grade amalgam is a more difficult problem in my hands than the manipulation of gold, to obtain the best results that can be obtained with either material.

Dr. R. H. Kimball, of Chicago: Teeth have been filled with amalgam, and are being filled with amalgam, and they will be filled with amalgam as long as there are dentists, and if we are going to use amalgam we want the best that can be had. I have listened to the discussion to discover if it were claimed by any that all teeth can be saved with gold; that has not been claimed. I want then to say a word for amalgam for those teeth that cannot be saved with anything else but amalgam. I believe that we need to strengthen ourselves along this line of work. I have amalgam fillings that are saving teeth to-day and have been in for fifteen years. I put them there because the conditions seemed to require amalgam, not that I would not have preferred to use gold, if it could have been used. We cannot rule amalgam out by anything we may say against it. *Review.*

SURGICAL TREATMENT OF ABSCESES.

Dr. L. Meisburger, Buffalo.

In opening an abscess the surface should first be carefully cleansed, and other antiseptic precautions observed. All instruments should be antiseptically treated. The first step then in our operation would be the cleansing of the surface with hydrogen dioxid, followed by a small injection of a five per cent solution of eucain B; an incision is then made at a point on the gum immediately overlying the apex of the affected root, with a pointed bistoury thrust down to the bone—a good-sized incision should be made. The bleeding is then encouraged, by the use of hot water, for a few minutes, when a pellet of cotton which has been dipped in a solution containing one or two per cent of cocain and

antipyrin four per cent is then laid against the periosteum at the bottom of the cut. In a few minutes bleeding will cease, when a spear-drill driven by the engine is passed through the bone into the tissue of the apical space.

Any bleeding which may occur is encouraged. For washing incisions and the abscess there is no agent more acceptable than a twenty per cent solution of phénol-sodique, it being both sedative and antiseptic. A fair-sized round bur is then used to cut away necrosed bone if any be found. If it is found necessary to excise the end of a root, a small fissure-bar is used and the root rounded, leaving no rough edges.

The wound is now cauterized with a fifty per cent solution of zinc chlorid and the cavity loosely filled with boracic acid gauze, your patient being seen every day, and less gauze inserted at each dressing as granulation progresses. The time required for healing is from four to ten days, according to existing conditions. An antiseptic mouth-wash should be recommended in addition.

Let me cite the case of a patient who was sent to me who had had an upper central incisor crowned some six or seven years previously; shortly after it had developed an abscess, which having remained all these years had become chronic. The crown of the tooth was cut off, the canal antiseptically treated, the end of root carefully filled, and another crown was immediately put on, and abscess treated as advocated by this paper. I report this case, as it shows where this method can be applied with gratifying results to both patient and operator. I have taken it for granted that the canals of teeth treated in this manner have previously been treated and thoroughly filled.

In conclusion let me say, then, that this operation is a very simple one, remembering that cleanliness is one of the first principles to be observed, a little care when operating on the anterior teeth so as not to penetrate the floor of the nose or the antrum of Highmore over cuspid or back teeth. This you can avoid by measuring your root approximately. If by accident you do penetrate these spaces, keep them antiseptically clean by using boracic gauze, and you need apprehend no further trouble. I have spoken of thoroughly filling and treating the canals of teeth operated on in this way, for if this is not done, and your operation fails, you will consider your operation a failure, when in fact your preparatory work was carelessly done. *Dental Cosmos.*

IVY POISONING.—The *Medical World* says bathing the parts in a solution of sodium hyposulphite will effect a speedy cure.

PROPHYLAXIS IN BRIDGE-WORK.

F. F. Fletcher, D.D.S., St. Louis, Mo.

There is probably no class of work that our profession is called on to do that requires the careful diagnosis, combined with artistic taste, and prophylactic measures, necessary in successful bridge-work. Almost any tooth can be filled or even crowned, and dismissed without further thought or attention. When a plate is fitted accurately, and articulated properly, the dentist's work is done; the patient is capable of cleansing and keeping in order without further aid from the dentist unless in case of accident. With bridge-work, however, all is different; comparatively few presented are suitable for this work either fixed or removable. No conscientious operator will insert a bridge in a mouth that is a stranger to the modern conventionalities of brush and pick—knowing full well it would receive no more courtesies than the older residents. Neither would he heap a double burden on piers already half undermined by pyorrhea or disease of any kind. Common sense teaches him that such members must be gently cared for and nursed back to health to be saved and made useful, and any additional weight or work put on them only hastens their loss. He will refuse to span from cuspid to third molar, even on perfectly healthy teeth, or do it under protest, even though it be a mental one. He knows any bridge on a curve from bicuspid to lateral or central is foreordained to speedy collapse. So it is readily seen that the field for successful bridge-work is quite limited. Yet within its proper sphere no more artistic, useful or satisfactory work appears in any oral cavity. After a most thorough and careful diagnosis you decide that a bridge is indicated; the problem is only half solved. If, perchance, the piers are parallel, or nearly so, it may have a long and useful career if properly constructed and adapted to tissues, both hard and soft. But if they stand at different angles you may take this for a rule: "A bridge is ill fitting in proportion as the piers diverge from the parallel; consequently the length of its life and usefulness can be measured by the same rule generally. The piers should usually be devitalized and roots filled. Then, after shaping properly and fitting crowns, the subject of replacing the lost organs comes up. I mention crowns only as attachments, as bands, lugs, open-faced crowns, etc., have long since been discarded by careful operators, except as temporary expedients. The dummies may be all porcelain, all gold, or a combination, as seems indicated. If not conspicuous, or entirely hidden from view, the all gold, resting on or

saddling the ridge, is probably the strongest, cleanest and more nearly restores shape and contour of lost organs than any other form, unless it be all porcelain, constructed in a similar manner. But here care must be exercised. If it rests too firmly on the ridge tumefaction may ensue. If it does not rest on a ridge it is a source of annoyance to the patient, unless food is prevented from lodging beneath. When ready for insertion, many of our best authorities recommend that it be fitted and worn a day or two before finally cementing in place. When you are satisfied all is right, set permanently, being careful that the piers occlude normally, and dummies but slightly. Care should be taken in removing all excess of cement from under and around bridge, as any left will cause irritation. Arriving at this point, the average bridge-worker is through with the case, except collecting his fee. The patient is dismissed, and leaves the office with the idea that so far as that bridge is concerned, he never needs see his dentist again, as it will outlast anything else in his mouth. This, I think, is an error. Generally the bands do not fit accurately, and in time the cement washes out, irritation ensuing. The piece cannot be removed and cleansed by the patient; minute particles are sure to lodge under saddle, between teeth and in all angles. The patient does not, and cannot keep it clean, any more than he can his own teeth, which all agree need the dentist's care at least yearly.

In my opinion every bridge should be seen by the dentist once in six months; cleansed on every surface, with floss, pumice, washes, etc., and put in as perfect shape as the operator is capable of; you thus add greatly to the life of the case, and show to your patient your interest in him and in your work. *Review.*

THE IDEAL BRIDGE.

Dr. F. F. Fletcher, St. Louis.

Let it be decided that the principle of parallel piers is correct, and I am willing to trust the inventive genius of our profession with doing the work. For more than a year have I noted the beautiful results of this system, under the guidance of our eminent specialist, Dr. Edward H. Angle, to whom I am much indebted for assistance and encouragement along these lines. I have seen bicuspid and molars standing at all angles gradually assume their normal position in the arch, thus restoring normal occlusion, while the bridge permanently retained them. The

anterior teeth are of course much less trouble and the irregularity can be corrected by any one. There can now be no excuse for any one inserting a bridge on anterior teeth that are not parallel, and when the first case is completed you will congratulate yourself on the artistic effect, as well as on the more accurate fit and consequent longevity and usefulness of the case. This will stimulate you to undertake putting posterior piers in proper position. Do not attempt the most difficult at first, and failing, condemn the theory, but with full determination to conscientiously accomplish this work, pursue it intelligently and patiently. As a well-earned reward you will soon have the supreme satisfaction of seeing in your own office a beautiful piece of bridge-work, not only artistically and properly constructed, but one which will slip into place on these parallel piers without changing shape in the least, leaving the completed case fitting as accurately as did the bands when the impression was taken. Then can you proudly say, there rests a structure, similar to many I have made before, but the first one to fit and rest on a reconstructed foundation, the original of which would have jeopardized any structure erected on it

DISCUSSION.

Dr. C. L. Hungerford: In frail roots, you will find when they are well cleansed they will be held together by bridge-work. All roots not parallel should be ground and every bit of enamel carved off at the cervical margin, so that the crown, instead of hugging the body of the tooth, will be cone-shaped, and then the harder you drive it the tighter it clings. Ordinary teeth have a more offensive odor than a well-adapted bridge, for there is more secretion, and more foreign particles work into the interstices.

Dr. J. N. Crouse: I believe we put in more bridges than we should, because of the good fees, and this is especially true of patients from forty-five years up, whose teeth are a little shaky. Applications for bridge-work come mostly from those who have had pyorrhea, and are the least permanent cases.

Dr. C. H. Darby: I can understand why a tooth should be devitalized before crowning when the piers are not parallel, but for a single crown I fail to see why it should be the universal practice to devitalize the tooth. I believe many crowns will do better service and last longer with the pulp in the tooth than out.

Digest.

Attention, application, accuracy, method, punctuality and dispatch are the principal qualities required for the efficient conduct of business of any sort.

ALVEOLAR ABSCESS.

Josephine D. Pfeifer, D.D.S, Chicago, Ill.

On this subject so much has been said and written, that it would be difficult for one not engaged in investigation along special lines to add anything outside of opinions based upon observation in active practice. We find the subject almost preëminently engaging the attention of the ablest writers and investigators, and yet finding them obtaining results diametrically opposite in their experimentations, and in the practical use of remedial agents, we find each with a favorite remedy, which leads one to be cautious in dogmatically accepting all, even plausible theories, but yet adds to the interest and stimulates individual observation.

The disease is usually found in two forms, acute and chronic, after the primary attack known as threatened abscess; we find them following each other in that order, if not arrested by proper means during the progress of their course.

Of its etiology, in a brief paper, it seems unnecessary to speak, suffice it to say that accidents occasionally, but death of the pulp and its infection more often, are the chief causes, though no dividing line has been established. The chronic form, when found, has usually followed an acute attack not infrequently due to the careless and imperfect work of the operator.

A case presenting itself, it is important to make a diagnosis not only of the pathological condition, but of the stage of the disease. The degree of tenderness and pain and swelling, with the length of time they have progressed, will give one an idea of the stage of the disease which, however, will not affect the first steps in the procedure of treatment.

A dead, infected and often purulent pulp is suspected in nearly all cases, and the escape of the poisonous gases of decomposition through the apical foramen infecting an area of pericementum in the alveolar space immediately around the apex of the tooth, manifesting itself first in a condition of hyperæmia, and later inflammation and pus formation, is the condition with which we have to contend.

My first step is always to adjust the rubber-dam, both for the purpose of preventing any further entrance of infectious bacteria from the oral secretions and for convenience in working by always having a dry, unobstructed surface.

The opening into the tooth is always made at a point on the surface that will serve the greatest convenience in the treatment of the pulp chamber and root-canal. This is according to the

rules laid down by most operators, and I find it an excellent one, for having thoroughness always in mind we must take the steps to make thoroughness possible.

Having made an opening large enough to reach the pulp chamber and root-canals, easily accessible, I proceed to remove the decomposing contents of the tooth.

The procedure in this part of the preparation is of vital importance so far as thoroughness is concerned; though I follow no prescribed rule in removing the infected material, it is important that each case be treated with equal care.

If necessary, for the purpose of accessibility the root-canal should be enlarged; where practicable, I use the drill and broaches, or where difficulty is experienced in a tortuous or small root-canal I resort to the use of Dr. Callahan's method, that is, fifty per cent sulphuric acid, which destroys enough bone tissue to perceptibly enlarge the canal. However, I limit the remedy to this use alone.

Having removed all the débris possible by the use of broach, etc., I cleanse the cavity with hydrogen peroxide, or pyrozone. This agent, by the way, I find indispensable in my practice. I then proceed to sterilize the infected tooth by the use of diffusible, sterilizing remedies for the purpose of rendering aseptic the entire matrix of the dentine, using for this purpose either eucalyptol, oil of cassia, or Dr. Black's 1, 2, 3. One of these remedies I seal in the cavity for two or three days, and then remove and reapply till complete sterilization is effected. This treatment, carefully applied with counterirritants frequently results in aborting an abscess, even frequently curing cases in which so often causes intense pain by its retention and conse-

If, however, the disease has progressed too far it will result in a typical acute alveolar abscess, in which more radical measures are necessary in the treatment.

The pathological condition in the alveolar space and the consequent disturbance involves more than it would in any other region owing to the characteristic situation of the tooth.

The peridental membrane covering the root of the tooth and lining the alveolus is the first tissue to become involved in the inflammation and decomposition induced by the presence of the infectious bacteria. As the disease progresses; the end of the root may become denuded and the wall of the alveolus penetrated by the pus seeking an outlet resulting in a fistulous opening.

If no external opening exists, but the abscess is threatening near the surface, the area is anesthetized by the use of cocaine,

and an incision made, which should never fail to be large enough, for purposes of free access in treatment through the opening and for free outlet of the oxidized material after the use of pyrozone, which so often causes intense pain by its retention and consequent pressure on sensitive pericementum.

Having a counteropening and the pus cavity treated with pyrozone till there is no further indication of its action by its effervescence, I use one of the many mild cleansing sterilizing agents, of which I prefer borolyptol, this having become a favorite remedy of mine. In an acute, uncomplicated abscess this usually proves successful. In case, however, of failure, I use as a sterilizing agent ninety-five per cent carbolic acid, applied by the use of the hypodermic syringe and blunt platinum needle, inserting the needle deep into the root-canal and packing tightly around it cotton saturated with sandarac varnish or gutta-percha to prevent the recurrent flow of the acid. This I find in one or two treatments in recent abscesses to be most effectual. In case some of the acid in its escape spreads over the soft tissues, I find olive oil one of the best antidotes in neutralizing its action. It will be found to act more promptly and effectually than glycerine or vaseline.

If, however, the abscess is in a more advanced stage, such as having a thickened pus secreting wall, I resort to escharotic and stimulating remedies, of which I prefer chloride of zinc, though I have had very good results from the use of carbolic acid and tincture of iodine, equal parts.

Desiring an escharotic stimulating effect, I use about a five per cent solution of zinc chloride, while in milder cases, wishing a stimulating effect only, I use about one per cent solution. I have become partial to this remedy, because of its being self-limiting in its escharotic action, and a powerful stimulant, and not so irritant, as is the case with sulphuric acid, particularly in the soft tissues.

Carbolic acid ninety-five per cent, I find one of the best agents in the destruction of infectious bacteria, but it does not seem to afford, as zinc chloride does, the stimulating effect and resulting rapid promotion of a healthy surrounding area when used alone. For this reason, it is combined with tincture of iodine.

During a period of ten years' observation in my preceptor's practice, excellent results were obtained by the use of carbolic acid alone as a sterilizing agent in the tooth structure. I have under my observations now, a tooth filled fifteen years ago, from

which a putrescent pulp was removed and the tooth sterilized by the use of carbolic acid alone—the tooth never having given a moment's trouble, and is in as good condition as ever.

In the treatment of persistent or recurrent abscesses assuming the chronic form, I resort to more radical measures. Before the application of the remedy, I curette the wall of the abscess thoroughly, destroying the membrane as completely as possible. The cause of the persistency of many of the chronic abscesses being a serumnal deposit on the denuded root, I always examine carefully with instruments to determine if any is present, which is readily detected by imparting a feeling of roughness to the touch with the instrument. It is important that this be thoroughly removed, which I do by the use of a scaler of a shape best adapted for reaching the deposit. If necrosis is present on the alveolar wall or the end of the root, I resort, if necessary, to the use of the bur or bone curette, for which purpose I find my various shaped excavators well adapted. If the external opening of a fistula is not freely penetrated, or not directly over the affected part, I never hesitate to make the opening large enough by carrying the incision to the most convenient part for operating; enlarging the opening with the bur if necessary, particularly where it is necessary to amputate a part or a whole of the root end. I have in the past used sulphuric acid as a solvent in slight necrosis, but find the surgical means giving more satisfactory results.

As a local application within the abscess for the promotion of granulations, I have had the best results from the use of nosophen, though, possibly, this remedy is not as effectual as iodoform; my results have been sufficiently satisfactory to justify me in dispensing with iodoform and its objectionable odor.

The sinus I keep open with sterilized gauze or cotton as long as is necessary.

In the more chronic cases where there seems to be a depraved condition of the blood, I find it usually advantageous to supplement the treatment by advising the use of restoratives or tonics, such as iron or compound syrup hypophosphites.

With this line of treatment I have usually had good results. Among the various treatments that have from time to time been highly recommended, I have found no specific.

I would emphasize the fact, however, that the milder antiseptic solutions, such as boracic acid, saturated solution, or some of the mild proprietary compounds have proved efficacious.

As before mentioned, I have met with good results with car-

bolic acid, but have adopted the use of the well-known diffusible sterilizers, such as the essential oils, which have proved so successful that I seldom prepare a tooth without their use.

Dental Review.

THE GROWTH OF OUR PROFESSION.

Dr. Truman W. Brophy.

[Such thoughts as the following are well worth the attention of young dentists, and old dentists, too.—ED. BRIEF.]

The growth of dental education during the past decade is to be noted by the following statistics. On commencement day, 1888, in an address delivered to the graduating class of this college by me, these figures were given in evidence of the status of the dental colleges in the United States at that time:

Number of practitioners, 16,000; colleges, 30; teachers in dental colleges, 503; students, 1,735.

The growth from that time to the present is shown by the following figures obtained from the deans of the various dental colleges of the United States during the past month:

Number of practitioners, 26,000; colleges (recognized), 43; teachers in dental colleges, 1,055; students, 5,835; increase in ten years in number of practitioners, 10,000; increase in number of schools, 13; teachers, 552; students, 4,100.

Where will this large number of young dental graduates go, and what will they do? Is the dental profession soon to be overcrowded? In answer to this question, let me call your attention to the fact that there are seventy millions of people in the United States; that diseases of the teeth are more prevalent than any others, as nearly every one is subject to them. Moreover, not to exceed twenty per cent of our people employ dentists for the preservation of their teeth, and the remaining eighty per cent for want of a knowledge of the possibilities of dentistry, for want of a knowledge of the benefits derived from the services of dentists, suffer destruction of their teeth, which is attended by pain and, in many instances, loss of health. There are about fifty-six million people to be educated in regard to the important subject pertaining to the preservation of their teeth and the diseases resulting therefrom. The lawyer of little learning and unprofessional methods; the physician and the dentist of very limited skill and knowledge, with no desire to improve or to elevate and honor their profession; and the minister, whose sole aim in life is to col-

lect his salary, are respected by nobody. They complain about the professions being overcrowded; they move frequently, but they manage to live. On the other hand, the professional man who knows his profession, who works hard to acquire a broader knowledge of it, and to elevate it in associations and in literature, and conscientiously discharges his duties will be a busy man, and will be respected and honored by his fellow-men. Graduates of 1898, to which one of these classes will you belong.

It became my duty during the past two months, accompanied by two professional friends, to visit in an official capacity the dental colleges of the West. Our mission led us to the Pacific Slope, and as we were comfortably seated in a palace car with an ever-ready porter to attend to our wants, a dining car abundantly supplied with substantial food and the delicacies of the season, a library car containing good books, stationery, etc., I thought as I looked out of the window on the great deserts of sand and sage brush of Nevada, how different was the journey of my father in 1852. His conveyance was a covered wagon drawn by horses, mine was a palace car; he slept with a blanket around him on the ground, I slept comfortably in a bed; he was surrounded by wild animals and hostile Indians, I was surrounded only by warm friends; he required three months to cross the mountains and plains, I completed the trip in three days; he was without news from home ninety days, I received news almost daily; his food was prepared at the camp-fire, mine with all the facilities of the culinary art.

In this connection I thought how similar to my father's experience was that of the pioneer in dentistry. My father voluntarily faced and endured the hardships named that his family might be benefited. The pioneers in our profession were not able to enter great temple of dental science and art, provided with sixty-five teachers to impart a knowledge of the technique of dentistry, including anatomy, chemistry, physiology, histology, materia medica, therapeutics, pathology, bacteriology and all the collateral sciences bearing on our vocation, an understanding of which you have acquired and which you will employ for the benefit of your patients; but these pioneers struggled alone, unaided by a master's guidance. They made the few crude instruments which they used, you procure instruments of the finest form and quality; they carved their artificial teeth from ivory, you procure from the manufacturers porcelain teeth in perfect imitation of natural ones; their life work was devoted to filling teeth and constructing artificial dentures, your sphere has become more ex-

tended, not only including what they did, but studying and treating all the diseases of the oral cavity. The fathers of our profession worked that our pathway might be less arduous than theirs; that the mountains and plains over which you travel may be crossed not in drudgery and uncertain footing, but on the smooth, oft-traveled road which their labor made it possible for you to enjoy; and as you have plucked the fruit of their planting, you, in gratefulness, should plant for others yet to be. *Dental Review.*

THE USE OF AMALGAM.

Dr. E. H. Allen, Freeport.

The success of amalgam work I believe lies in the individuality of the operator who prepares the cavity. As beautiful an amalgam filling as I ever saw was in the mouth of a young lady who happened to fall into my hands for treatment. She had in a lower first molar a beautiful amalgam filling; all the margins simply perfect. Talk about perfect margins in gold fillings. You could not imagine anything more perfect in gold than the margins of that amalgam filling were. I asked her who inserted that filling, and she said Dr. McKellops, of St. Louis. Now, I am aware that Dr. McKellops declares that he never put in an amalgam filling. Of course, it is possible the young lady's memory may have been at fault as to who made that particular filling. But still if Dr. McKellops did insert that filling he need not be ashamed of it. The perfect preparation of the cavity is the one particular point in amalgam work, carefulness of detail in preparing margins and everything about the whole operation, and when finished you will have a beautiful filling. Of course some amalgams I have used have brought about better results than others; we should have the very best amalgam, but I believe the most important thing is the perfect preparation of the cavity, and skill in manipulation.

Dr. W. A. Stevens, Chicago: According to the number of teeth that are filled with amalgam you save just as many as you do with gold. I do not think there is a particle of difference. At the same time you will fill teeth with amalgam that you could not possibly fill with gold. Now, I claim that I do use amalgam.

MEMORY AND ITS CULTIVATION.

A good memory and a strong mind, although they appear at first to be synonymous, are, we find, on considering the phrase closely, dissimilar. A remarkable memory does not imply a strong mind; neither, conversely, does a strong mind signify a remarkable memory. Lady Montagu tells us that Addison's daughter was nearly imbecile, yet so powerful was her memory that she could repeat a sermon which she had heard once, and could learn pages of a dictionary by heart. One man by hard study acquires a knowledge of history, while his brother reads the same books once, and knows, for the time being, the facts as thoroughly as the other, but his knowledge is more transitory. Persons who learn very rapidly, generally forget more quickly than those who require more study. There are exceptions to all rules, but, generally, the most brilliant minds are not endowed with the best memories. In the days of Homer, and for centuries later, prose works as well as poems were learned by heart; books were very scarce. They were written with great labor and expense, which excluded all but the rich from possessing them, while a private library was almost unknown.

On account of the scarceness of books, the ancients, as we have said, were often compelled to learn them by heart, which goes far to explain the remarkable memories possessed by those men over the men of to-day. After the invention of printing by Gutenberg (A. D. 1440), books became more plentiful, so that, in this nineteenth century, there are few persons so poor as not to possess a few volumes, if not a small library, of their own.

Although the value of printing is immeasurable, it has destroyed in part the good practice, in vogue in earlier generations, of exercising the memory. The human body is frail at best, but the memory is perhaps the frailest part of all. As a learned writer has said, it is affected by disease, by injuries, and even by fright, being sometimes partially lost, and at other times entirely so. Very often the memory appears to attempt, as it were, to make its escape from us, even while the body is at rest and in perfect health.

Physical culturists tell us that systematic exercise develops the body more quickly than severe training at irregular periods. This is also true of the memory. Persons to-day are too apt to neglect the training of this important faculty until the best part of their lives are over, when any study becomes irksome.

Age is the greatest enemy of memory. We see this in old

persons who often remember incidents that occurred in their childhood, while things that have happened recently they cannot recall. As man grows older, his mind, like an engraving plate, wears smooth, and its recollections become blurred till it loses its impressions entirely. Youth is the period when the mind is most susceptible to impressions. Although cultivating and preserving the memory are of such importance, there are few persons who know how to cultivate this faculty. We should remember that memory is not only valuable in itself, but that it is the foundation of all knowledge. For what does it profit a man if he read a hundred histories, and has not the memory to retain their contents longer than it takes him to peruse them? There is danger, however, of straining the memory, and care is needed to prevent this happening. It is better not to train it at all than to injure it by overwork. I have known men at the University who have taxed their memories to such an extent that they lost the use of them for months and were compelled for a time to discontinue their studies.

Why are children sent to school? Surely it is not only for the benefit derived from the dry subjects they are made to pursue, but to train and discipline their minds and strengthen their memories. Schools are the gymnasiums of the mind. It is to be regretted, I think, that there are not more poetical recitations or memorized matter required each day in school. If, once a week, a given number of lines were learned from some long poem like Tennyson's "In Memoriam," and at certain times during the year the pupils were required to write down all the lines they had learned, it would be a great help to them. And if they were required to learn the definitions of all the words they do not understand, it would add considerably to their vocabularies. Another excellent practice is learning dates, which can easily be done when reading histories and biographies, for interesting facts and incidents can be connected with them which help the mind to retain the numbers. One system promotes the learning of a list of a hundred words which have no connection with each other, but I do not think this method is as profitable as studying poems or pages of prose, for then we acquire knowledge, and that agreeably, while at the same time strengthening the memory.

With many persons, dates are very difficult to remember, but this is mainly because they do not connect them with prominent periods of history, for they are not more difficult to retain than the name of a battle or a king. One of the first steps, however, in memorizing anything is to be interested in the subject.

for it is difficult to commit to memory any subject in which we are not interested or do not understand. Conversations with learned persons, particularly on subjects that have been lately read, will awaken dormant facts, dates, and incidents, thus stimulating the memory.

Besides these few hints on the improvement of the memory, I would like to quote a few lines from Isaac "Watts" ("Improvement of the Mind"), on this important faculty: "There can be neither knowledge, nor arts, nor sciences, without memory; nor can there be any improvement of mankind in virtue or morals, or the practice of religion, without the assistance and influence of this power. Without memory, the soul of man would be but a poor, destitute, naked being, with an everlasting blank spread over it, except the fleeting ideas of the present moment."

George C. Perine, in Self Culture.

AN INTERESTING CASE.

F. D. Davis, D.D.S., Minerva, Ohio.

In April, 1897, J. W—— called at my office to seek relief from pain in his face and jaw. In the battle of Perrysville, Ky., 1862, he was struck by a ball just below the right cheek bone. Patient stated that the wound discharged through the cheek for a while and then at the opening on the zygomatic surface of superior maxillary, but during the last ten years the discharge had been through the nose. His stomach eventually became weak, appetite failed, and at the time of presentation there were signs of general poisoning and indications that the patient would not live much longer unless relief could be obtained. He complained of continued and severe pain in the face and jaw, and for years had not slept more than an hour at a time on account of pus accumulation and discharge from the nose. Several physicians had told him that the presence of polypi in the nose prevented him from breathing through that member, and advised their removal for relief. Exploring through a small opening at the zygomatic surface of the superior maxillary I could find no necrosis, but found some hard substance that indicated the presence of a foreign body in the antrum. The second superior bicuspid and first permanent molar were missing, and, applying a local anesthetic, I extracted the second molar to obtain adequate room for operation. With a trephine and excising forceps I cut away the process and attempted to remove the foreign body, but it would draw

back each time. While it was in the antrum, it was not resting on the floor, but seemed enveloped in a tough membrane. With a hooked instrument I finally succeeded in tearing away the body, finding it surrounded by a tough and highly-inflamed membrane, covered with stringy mucus that looked like a false membrane. It proved to be a minie-ball encysted, a black substance about one-eighth of an inch in thickness, covering the ball.

The night after removal of the bullet the patient enjoyed the best night's rest he had had in ten years. He could breathe freely through the nose, and there was no after trouble.

The wound was washed out with peroxid of hydrogen and warm water and packed with iodoform gauze.

Borolyptol, one part to three of water, was used as a wash, a rubber plate was constructed to cover the roof of the mouth, attached by bands to the third molar and first bicuspid. This covered the parts and prevented ingress of foreign matter. The patient presented for a few weeks then treated the case himself. The wound healed rapidly, and the patient gained twelve pounds the first two months.

He experienced no after trouble, and is now a well and happy man.

Ohio Journal.

"I can't, it is impossible," said a lieutenant to Alexander. "Be gone!" shouted the conquering Macedonian, "there is nothing impossible to him who will try."

Were I called upon to express in a word the secret of so many failures among those who started out in life with high hopes, I should say, unhesitatingly, they lacked will-power. They could not half will. What is a man without a will? He is like an engine without steam, a mere sport of chance, to be tossed about hither and thither, always at the mercy of those who have wills. I should call the strength of will the test of a young man's possibilities. Can he will strongly enough, and hold whatever he undertakes with an iron grip? It is the iron grip that takes the strong hold on life.

What chance is there in this crowding, pushing, selfish, greedy world, where everything is pusher or pushed, for a young man with no will, no firm decision? "The truest wisdom," said Napoleon, "is a resolute determination." An iron will without principle might produce a Napoleon; but with character it would make a Wellington or a Grant, untarnished by ambition or avarice.

Success.

DENTISTRY IN GERMANY.

Dr. F. S. Buckley, Chicago.

The degree of Zahnarzt, or tooth doctor, is carefully protected. Only those who have completed the "Gymnasium" course, corresponding to our ordinary college course, may enter on the study of dentistry, and the degree can be obtained only after three years of study in a German university.

Any one may hang out his shingle as Zahnkünstler or Zahn-techniker, meaning tooth artist or tooth mechanic, but not as Zahnarzt, or tooth doctor.

This title is to-day worthy of much respect. Since the establishment of the dental department of the University of Berlin, seventeen years ago, its value has steadily increased. Several universities now have similar departments, and the number of graduates with definite clinical experience is large.

German dentistry is rapidly advancing to a high place, and much of the credit for this advance is due to the American Dental College, through the earnest work of Professor Miller and others who have introduced the American clinic and advanced American methods. The day has passed when the sign "American Dentist" is enough to insure success, for the German people are now better able to discriminate between good and bad dentistry.

The Zahnkünstler plasters teeth with copper amalgam and cement, fills cavities over dead nerves and drills a hole into the root just beneath the margin of the gum—to cure an abscess! But I verily believe that we should not lay such malpractice at the door of the Zahnarzt.

I will give you some of the characteristics of Professor Miller's practice with some methods not common in this country, and a few incidents from practice which may prove interesting by contrast and suggestion:

The office and home were in the same apartment on the second floor in a building not far from the central portion of the city, but yet in a residence district. No sign was used, or, indeed, needed, and the new patient must be supplied with the address.

This would naturally be the case, as Professor Miller's patients were largely from the nobility and the wealthy classes. Fees were, of course, high, and you will be interested to know that bills were usually mailed but once a year, on January 1st, but they were also usually paid.

Appointments were short, patients generally preferring to come often rather than endure long sittings.

This naturally points to the fact that large contour gold fillings were not an every-day occurrence.

The request is nearly always made for a filling which will not show; and this leads to the practice of inserting cements and porcelain and glass fillings in the anterior teeth.

American dentistry is slowly overcoming this prejudice against gold, but Germans change slowly, and reforms are not as readily effected there as here.

This leads me to speak of the extreme sensitiveness of many of the Germans to pain. I have seen a military officer, of undoubted bravery, tremble as I approached him with my instruments, while the perspiration came out in great drops on his forehead.

A lady residing in Vienna preferred to make several trips to Berlin merely because she believed she was saving herself some pain as a result. Many instances might be cited showing especial appreciation where care was taken to relieve pain, and one of the chief qualifications (in the eyes of the patient) was a delicate touch.

One patient, Prince —, was so grateful that he offered me his photograph, and in the letter accompanying it he expressed his feelings as follows: "I hope you will receive this small remembrance as a *signe* of my thankfulness for the kind and patient way you treated me, trying to hinder pain as *fare* as ever possible." Another, a Polish count, wrote me shortly before I left Berlin as follows (you will observe his Continental English): "Yesterday Countess — told me you were going to Constantinople. I only hope you are still in Berlin. Please kindly let me know, as I would like to have my teeth got right by your capital hand.

Yours,

"COUNT —."

Another patient, a Russian princess, was so closely identified with the court of the Czar as to also be extremely afraid of intrigue, assassination, dynamite, and what not, and I was compelled to operate for her without my assistant in her private room at the hotel.

Her unusual suspicion and fear hampered me to such an extent that I was obliged to make three visits before I succeeded in inserting one gold filling, and you may be sure that filling was an expensive one for her, as it ought to be.

There are some materials and methods used in Germany in which I think you may be interested, and while I do not hope to bring to your attention much that may be of direct practical value

in practice, I trust there may be a helpful suggestiveness in this brief study of foreign practice.

In Professor Miller's practice much tin and gold was used. This was an inheritance from Dr. Abbott, and is a very valuable material in the posterior teeth. I will not take time to describe it, especially as I can refer you to two articles easily accessible in the Newberry Library; one by Dr. Harlan, in the *Independent Practitioner* for 1885, and the other an abstract, with translations by Dr. James Truman, of a pamphlet by Professor Miller on "Tin and Gold as a Filling Material." This pamphlet has, I believe, not been translated from the German.

Glass fillings do not find favor in this country, but are much used abroad, and when skilfully fitted and inserted are much more permanent than entire cement fillings, and are very difficult of detection. The late Dr. Evans, of Paris, was very partial to a porcelain filling made from a porcelain tooth of appropriate color and shade and fitted to the cavity, usually on the buccal surface. He showed me one case in his own office, and I have seen others of his cases in Berlin. Dr. N. S. Jenkins, of Dresden, wrote me some time ago that he expected this winter to give to the profession a perfect glass filling; but a letter from C. Ash & Sons, of London, informs me that Dr. Jenkins has not yet introduced his glass filling, but he is still working hard at it to perfect it in all details.

Dr. Jenkins, since the death of Dr. Evans, is the oldest American practitioner on the continent, and is greatly esteemed and loved by American dentists abroad.

In 1891 he was appointed one of the royal counselors at the Court of Saxony, a very great honor to himself and to the profession he represents.

Professor Miller has had made a smooth broach similar to Stubbs' broaches, but untempered, with which he very deftly inserts treatments in fine root-canals nearly to the apex of the root. This he does by winding cotton loosely about the broach and drawing the broach out, leaving the cotton in the canal.

They are not to be found at the depots here, but Stubbs' broaches may be used in a similar manner by drawing the temper. Cotton was used by Professor Miller and Dr. Abbott (son of the old Dr. Abbott) for filling root-canals, but, although I have seen many cases where it was successfully used, I never rely on it for permanent fillings.

I find it, however, very valuable for testing doubtful cases, saturating with oil of cinnamon or cloves and sealing with soft

gutta-percha or cement, using, however, some other antiseptic in the anterior teeth.

I might say here that since my return I have settled down again to our distinctive American methods of operating, believing that, as we have the opportunity, it is our duty to guide and control the patient, to a large extent, in the selection of materials which shall insure a permanent result.

Lastly, I desire to present to you as strongly as I may a soft cement for covering treatments to relieve sensitiveness and septic conditions, and especially for covering nerve paste where the cavity extends beneath the gum margin. This is "Fletcher's Artificial Dentine," for capping exposed nerves and filling sensitive teeth, and may be found at Justi's, and I doubt not at S. S. White's, if there should be a demand for it. I have endeavored to ascertain its composition, but find that the Buffalo Dental Manufacturing Company, who handle Fletcher's materials, have never been able to get it. Professor Miller has mentioned it in his articles, and uses it constantly. It is very soft, and can be made to flow into a cavity over the nerve paste without the slightest danger of pressure. You are absolutely certain that no arsenic can reach the gum or pericemental membrane.

It is invaluable for capping slightly exposed nerves. I am much surprised to find that this preparation has not become well known and appreciated in this country. I wrote C. Ash & Sons recently, asking them to ascertain, if possible, the composition of this cement. Only this morning I have received a reply, inclosing a letter from Mr. Thomas Fletcher, of Warrington, England, manufacturer of this preparation, who gives its composition as basic sulphate of zinc. Not certain that I was much wiser than before, I took the letter and a box of the cement to Dr. Ames, who very kindly consented to analyze it, and I have asked him to present the result of his analysis himself later on.

It has occurred to me that while Professor Miller is widely known in bacteriology and antiseptics, he is not so well known as an every-day practitioner and man. And, as I have been in close personal and professional contact with him during a period of two and a half years, I feel it to be a privilege to be able to state that he is a thoroughgoing dentist, working from three to four hours every morning at the chair—rapidly, faithfully, successfully. He is a very careful, painstaking operator who keeps abreast the advances made by the profession, and is educating his German patrons up to a higher appreciation of the value of gold in preserving teeth.

Young Miller was studying physics and chemistry in Berlin when he was attracted into the study of dentistry by Dr. Abbott. He took his D.D.S. degree in Philadelphia in 1880, his M.D. degree in the University of Berlin in 1884, and was soon after teaching in the university. In 1893 he received the title of *Ausserordentlicher Professor* (*extraordinarius*), a very great honor to an American citizen. His now famous demonstration of the bacteriological origin of caries appeared in 1884, you will remember, and thus early in his practice he began to do the work of a practitioner, professor and investigator, and thus his day of work was divided, three or four hours at the chair, three hours in college, including his lecture three times a week, some two hours in his bacteriological laboratory, and in the evening study and writing.

But twelve years of this incessant work dragged him down till, in 1895, he was unable to think a thought or write a letter. He is now somewhat improved in health.

He is one of the most cordial and lovable of men, and is highly esteemed by all who know him well.

It is so short a time since the death of Dr. Thomas W. Evans, of Paris, that I judge a few words about him will have an especial interest.

I first met him at the World's Medical Congress, of 1890, in Berlin. He was interested in some practical cases which I had the privilege to treat, and of which I sent reports to him and to Dr. Jenkins, of Dresden, for several weeks. At the banquet I had a conversation with him, and some months after he called on Professor Miller and myself at the office.

Two years later, in June, 1892, while in Paris I called on Dr. Evans, and he showed me some of his own work, explained some of his methods, and then invited me to ride home with himself and Mrs. Evans, who usually rode down to the office about five o'clock to ride home with her husband.

It was principally during the long conversation after dinner that I learned the following interesting facts:

Dr. Evans began practice in Paris in the year 1848, and thus had practiced nearly fifty years at the time of his death.

The friendship of the Emperor Napoleon probably began his wonderful practice in royal families, which continued to the last.

I was shown a letter from the Princess of Wales, requesting Dr. Evans, if convenient, to come to London some three weeks later, when the princess would return from her visit in Denmark.

Another from the Queen of Holland, who wrote to offer a painting to Dr. Evans "as a slight testimonial of her esteem and regard." The painting was in oil, and was the queen's own work, and, as I observed later, was only one of many such gifts in his art gallery. While riding on the avenue the carriage of the Queen of Spain passed us, and it was very evident by her manner that she regarded Dr. Evans as a very good friend.

At the marriage of the Princess Victoria, in Berlin, Dr. Evans was an invited guest at the palace of her mother, the Empress Frederick, who had been his patient from childhood. And so on I might speak of many other royal personages who were his patients and friends.

How was this unexampled eminence attained? I believe by his sturdy honesty, rare sincerity and great tact, together with his unusual power of helpful friendship. I am glad to be able to add that these rare qualities were the fruit of deep religious conviction. This was the source of his great and good life.

Dr. Evans was a Quaker, and also his saintly wife. They lived in gay Paris, but their home was a pure American home. Their lives were simple and true, their sympathies went out to the poor and needy, and the amount given in time and money to deserving persons and to philanthropic enterprises was very large.

His honesty and faithfulness were beautifully shown by his retention of the name of Dr. Brewster on his sign in the Rue de la Paix. "Brewster & Evans" it remained to the last, simply because he had promised it.

Again, when abandoned by all, the Empress Eugenie fled to his house for protection; he risked his own life to save a friend in distress. In the Franco-Prussian war Dr. Evans spent \$350,000 of his own money and one whole year of his life managing the "American Ambulance and Sanitary Commission." It may be said in passing that hygiene and sanitary conditions were a life study, and in the Crimean war, and later in our own Civil War, Dr. Evans rendered very great service to wounded men.

His book on this subject has had great influence throughout Europe in bettering the sanitary conditions of camps and hospitals.

This great mission to the wounded of the Franco-Prussian war was undertaken as an American, for Dr. Evans never gave up his American citizenship, and, as a neutral and non-combatant, he braved in person the dangers and perils of many battle-fields to save the lives of wounded men.

As a neutral he was able to enter within the lines of both armies, and served German and French soldiers alike. Ah! the blessings that were, and ever will be, showered on him for his Christlike devotion to suffering humanity.

After the war, as an American citizen, he at last accepted, at the hands of the General Assembly of the French Republic, that which he had several times declined to receive from the emperor, the decoration of "Commander of the Legion of Honor." Time would fail to enumerate the other decorations received from the Emperor of Germany and other monarchs.

Much might be said of Dr. Evans' beautiful home in the Avenue Malakof, of "The Lafayette Home for American Girls," costing \$1,500,000, of the simplicity of his office appointments, of his extensive literary work.

Review.

THE PROGRESS OF SCIENCE.

It is the fashion in certain quarters, says a writer in *La Nature*, to speak in disparaging terms of science and its improvements. M. Berthelot, the eminent chemist, has eloquently exposed the injustice of these estimates, but they are most effectually refuted by enumerating the leading scientific achievements which have shed lustre on the closing years of our century.

Let us suppose that some ordinary mortal had fallen into a deep sleep just after the closing of the exposition of 1889, less than nine years ago, and therefore knew nothing of the advances made since then, up to the date of our next great international celebration. The following would be the principal objects of his admiration and study:

1. The bicycle which is revolutionizing our manners, and of which he could have seen only a few specimens, and these but clumsy contrivances compared with the little queen of our day.
2. The automobile carriage, driven by petroleum or electricity, whose promise is perhaps even greater than that of the bicycle.
3. Electric railways, almost unknown in 1889, but which will completely change the working methods on our great trunk lines in the next century.
4. Polyphase currents, which enable us to transmit and distribute the motive forces of nature to any distance.
5. The Laval turbine, a new process—from the industrial view point—for utilizing high pressure steam.
6. The internal combustion motor of M. Diesel, the most economical means as yet devised of transforming heat into work.
7. Calcium carbide,

which generates acetylene, one of the illuminants of the next century. 8. The cinematograph, over which our capacity of wonder has fairly exhausted itself. 9. The Roentgen rays, which are revolutionizing the healing art. To these nine new discoveries, or great inventions, whose results are secure, and are daily availed of, for our profit or pleasure, we may add: 10. Liquid air, for industrial purposes. 11. Color photography, in which the surprising results recently obtained by MM. Lumière have just been laid before the Academy of Sciences. 12. Wireless telegraphy, an invention full of promise. 13. Cold light, produced by luminescence of rarefied gases traversed by the electric current. 14. High frequency currents, with which Tesla and d'Arsonval have performed such wonderful experiments.

In less than ten years, merely within the domain of mechanics and physics, we have here fourteen new sensational discoveries, to be added to the already long list.—*Translated for Popular Science News.*

SENSITIVE DENTINE.—Dr. C. B. Rohland, of Illinois, says: "By adding just sufficient carbolic crystals to cocain hydrochlorate and rubbing together with a spatula until the cocain is dissolved, a thick syrup is obtained, which is escharotic, antiseptic, obtundent. With this he often obtains most gratifying results in the treatment of sensitive dentine in cavities of decay. It should be used with the rubber-dam, dryness to the verge of desiccation secured, applied warm, and treated in situ with the hot air syringe, as hot as can be borne, and again dried before excavating. If one application fails to give the desired result, two almost invariably will be effective."

BEAST COMMUNION.—A young lady traveling to Moscow constantly kissed and fondled a neat little dog belonging to another lady. The little animal seemed well pleased and acted very mannerly, but all remarked that it was sneezing constantly. After arrival in Moscow the young lady was first affected with a redness of the tip of the nose, which did not yield to any remedy; then the nose began to be painful, inflamed and began to secrete mucus. The physician who was consulted diagnosed the case influenza. But as she constantly became worse, and the ulceration increased, a consultation was held, when the microscope revealed a case of glanders, which had evidently been transferred from a horse to the dog.

Medical Age.

THE LIBBY METHOD.

Dr. J. L. Wolf, Washington, D.C.

Having had during more than eighteen months' experience, opportunities for observing the most gratifying results from the use of the Libby hand-pressure gold pluggers, supplemented by the Rogers mallet points, especially in those cases which, by virtue of unusual difficulty attending the insertion of the filling, furnished excellent tests as to the efficiency of the instruments, it seems of sufficient importance, to call the attention of those who may not be entirely satisfied with the results obtained by the generally accepted methods. The feeling of confidence as to the results which follow the use of this method contributes greatly to avert much of the sensation of exhaustion often experienced.

As mallet points supplementing the Libby-hand pluggers, the Rogers points are of incalculable value for the twofold purpose of conservation of physical strength and condensation of material. With the Russel electro-magnetic mallet as the propulsive power they are capable of a very wide range of application.

Register.

A PRINCE OF PHILANTHROPISTS.—The late Baron de Hirsch was a man of an unusually philanthropic spirit. Possessed of great wealth, he seemed to have an impression that he was simply a custodian, and not an owner, and that he could give no higher proof of this than to use his vast fortune for the benefit of his fellow men. The total amount of his benefactions will probably never be ascertained, but the following statement made by the Hon. Oscar S. Straus in a recent number of *The Forum* gives some idea of their size, variety and character:

Jewish Colonization Association, \$10,000,000; De Hirsch Trust for the United States, \$2,500,000; trust fund for education in Galicia, \$5,000,000; fund for assistance of tradesmen in Vienna and Budapest, \$1,455,000; fund for the Hungarian poor, \$1,455,000; turf winnings during 1891-94, distributed for charitable purposes, \$500,000; gift to the Empress of Russia for charitable purposes during Russo-Turkish war, \$200,000; gifts in 1893 to London hospitals and other charities, \$200,000; gifts to Alliance Israelite Universelle, \$400,000; proceeds of the sale of his son's racing stud, distributed among charities, \$60,000. These alone amount to the enormous sum of nearly \$22,000,000.

Christian Advocate.

PRACTICAL POINTS.

By Mrs. J. M. Walker, Bay St. Louis, Mississippi.

Extracting Difficult Roots.—Drill into canal with B size How twist drill in the engine. Tap with same size How screw tap. Screw in bright metal post, following with the chuck, till it nearly or quite touches the root. With forceps grasp chuck and extract with as straight a pull as possible. Avoids all laceration of gums by injury to alveolar process.

A. J. Butler, Dental Cosmos.

To Secure a Perfect Plaster Cast.—Never pour newly mixed plaster on an impression without first thoroughly soaking the latter in water. If this is not done the dry impression will absorb the water from the freshly mixed plaster while the displaced air from the former, being forced into the latter, results in an imperfect cast.

D. D. Atkinson, Am. Den. Weekly.

Treatment of Burns.—Cover the affected parts with a thick layer of a paste of calcined magnesia mixed with water, adding fresh paste as it dries and becomes detached in spots. Under this protection the wounds heal without any discoloration.

Prof. Vorgeley, Med. and Surg. Reporter.

Gutta-percha Cotton.—Cotton saturated with gutta-percha by dipping in chloro-percha and evaporating the chloroform, when cut up into different sized pieces, will be found valuable for many purposes. For placing over arsenical applications a piece may be warmed and dipped in chloroform to soften. It may be used to give a close adaptation of matrices to the walls at cervical margin, etc., etc.

A. T. Concher, Jour. Br. Den. Asso.

Antiseptic Power of Formaldehyde.—8 to 10 per cent destroys the spores of micro-organisms in ten minutes. A one per cent solution destroys cultures within an hour. A three per cent solution will remove all infection from the hands. One part in ten thousand prevents the growth of pathogenic micro-organisms.

Am. Med. and Surg. Bulletin.

Broken Column of Mercury in Vulcanized Thermometer.—Heat the thermometer until the mercury in the bulb expands and joins the mercury above. Cool off suddenly and it will all go down together. It will then register correctly again when the temperature is increased.

J. M. W.

The Arrest of Decay by Fillings.—The metallic salts furnished from amalgam enter into the dentine and, with the organic portion of the tooth, form an insoluble lining which arrests further decay. Tin is better than amalgam, because the stannic oxid is white and does not discolor dentine. Copper, as an element in alloys, furnishes these properties more perfectly than silver or tin.

S. B. Palmer, Dental Digest.

Cement for Cast Iron.—I have used the compound of glycerin, oxid of lead and red lead, with the happiest results. It takes some little time to dry, but turns almost as hard as stone and is fire- and water-proof. Take litharge and red lead, equal parts, mix thoroughly and make into a paste with concentrated glycerin, to the consistency of soft putty. Fill the crack and smear a thin layer on both sides of the casting, covering the fracture. Clean off surplus when nearly dry with old knife or chisel.

J. M. Benthall, Scientific American.

Treatment of Septic Pulp Canals with Fistulous Opening.—Adjust rubber-dam and inject hot water into canals until all loosened debris is removed, absorbing overflow with bibulous paper. Dehydrate with Evans' root dryer; place cotton saturated with oil of cinnamon loosely in cavity; seal with gutta-percha, and dismiss for forty-eight hours. Repeat, if necessary. If exudation of pus is noticeable at fistulous opening, bur through to apical space and inject pyrozone through the canals till it traverses the fistulous tract, mechanically and antiseptically cleansing it. Then with hypodermic syringe inject oil of cinnamon till it oozes from the gum opening. Continue till pus formation, fetid odor and sensitiveness are eradicated.

W. V. McLean, Dental Cosmos.

To Remove Blood Stains.—Soak the towels, etc., in warm water to which tartaric acid has been added. No soap is needed.

Med. Times.

An All-glass Syringe.—A. Wulfring Luer, No. 6 Rue Antoine Dabril, Paris, France, makes an all-glass syringe, having no washers of any kind, the solid glass piston being ground to a perfect fit.

Dr. Gordon White, in Ala. State Den. Asso.

Extracting Roots.—When a root is broken off below the margin of the alveolar process, inject cocain, and with a sharp bur remove the process on either side of the root as far as desired, or until the root can be grasped with the forceps. With local anæsthesia the operation is a painless one.

D. D. Atkinson, Am. Den. Weekly.

Formalin Cement for Root-canal Filling.—*Powder.*

Calc. of sulphur..... 200

Hydrarg. bichlor..... 4

Mix finely.

Liquid.

Acid sulphuric..... 32

Formalin..... 100

A. q., distillate..... 100

Rub up a few drops of the liquid with sufficient of the powder to form a paste. Introduce into the dried root-canal. It solidifies in a few moments. No discoloring or corrosive effect.

Abraham, in Zahnärztliches Wochenblatt.

To Clear the Abscess Syringe Point.—Hold the metal point over an alcohol or gas flame until the mat chars the debris which caused the stoppage. Air pressure from the bulb will force it out and clear out the point.

Am. Den. Weekly.

Pulp Devitalization.—When the pulp must be destroyed, it is almost if not quite criminal to use so dangerous a method as poisoning with arsenious acid when we have at command such methods as the chlorid of ethyl spray, cocain in crystals or solution applied to the pulp, or injected into it, or cataphoresis to anæsthetize it when it may be removed with as little pain as you would remove a shred of gum tissue.

J. Taft, Dental Cosmos.

Thycolal.—The most satisfactory mouth-wash that I have used in the treatment of pyorrhœa alveolaris is thycolal, in which saccharine, a powerful germicide, is combined with other agreeable antiseptics. Its action is rapid and powerful. It has no escharotic tissue-destroying properties, and is so agreeably flavored that patients willingly use it.

G. V. I. Brown, in N. J. State Den. Soc.

Local Anæsthetic.—

Cocain..... grs. xv

Glycerin..... 3 v

Sulphates of morphia and atropia..... gr. j

Carbolic acid..... gtt. iij

Distilled water..... q. s. to make ij 3

Clyde Payne, Pacific Gazette.

A Pleasant Antiseptic.—Add a teaspoonful of pasteurine to the water used for syringing out cavities. It is pleasant to the patient, and has excellent antiseptic properties.

Dr. J. A. Chapple, Am. Den. Weekly.

ITEMS.

I have been using for some months, for root-canal filling, balsamo del deserto dissolved in an alcoholic solution of hydro-naphthol. This varnish "runs" readily into fine canals and can be followed with gutta-percha points. It seems to be satisfactory. It is best carried to the canals between the points of a pair of Flagg's dressing pliers. *L. Van Orden, in Weekly.*

In pyorrhea I syringe the pockets with a 3 per cent solution of pyrozone and follow with a 10 to 15 per cent solution of aromatic sulphuric acid. I get excellent results from this method. Aromatic sulphuric acid takes hold and removes dead portions of bone, and does not affect the living.

F. H. McIntosh, in Dental Century.

TAKING IMPRESSIONS.—Do not use too much material when taking an impression. Select a cup to fit rather close, and put into it only enough material to cover the parts to be duplicated by the model.

There is no better way of taking a plaster impression than by first taking one in wax and enlarging it a little, except at the "heel," and then pouring in a small quantity of plaster and retaking the impression. *Dental Weekly.*

Formaldehyde ranks high as a deodorant. Either as vapor or in solution it almost instantly removes the putrid odor of decomposing animal or vegetable matter, combining with sulphuretted hydrogen, ammonia, and ammonia bases generally, to form inodorous compounds. Putrid meat, broth, brine, etc., are immediately deodorized when treated with a little of the forty per cent solution. *A. H. Peck, in Review.*

In reference to induction of medicaments into dentine and pulp by cataphoresis and trouble ensuing, I must differ. In my opinion it will not be the drugs used to bring about anæsthesia that may cause death of pulp, but more likely to be the electrical current used at too high voltage. Some cataphoretic machines will give as high as 60 volts, which is claimed by some will destroy tissue. Of course, they contend this amount is not to be

used to produce anæsthesia on sensitive dentine, but only where a pulp is to be extirpated. But a small percentage of dentists are posted sufficiently on the science of electricity to know what voltage is injurious, and will likely turn on the full force when anæsthesia is not produced in the time they think it should be, although by their carelessness the current may be deflected from the tooth entirely, and entering the soft tissues, possibly doing more harm than if pulp had been devitalized.

Dr. Fletcher, in Review.

CLEANLINESS.—One of the most important factors in maintaining health in good order is cleanliness. It is comprised in measures that tend to keep the organs clean and in proper order to perform all their functions. The cleanliness of the skin and purity of the air are essential for the proper keeping of health. Any impurities that are taken in breathing find their way to the blood, and thus poison the system, and are the cause of many infectious diseases. If the skin is not kept clean the impurities that are to be secreted are improperly accumulated in the blood and tend to give rise to severe and often dangerous disorders.

Family Doctor.

Taking impressions in plaster in difficult cases for partial dentures, I do not think it advisable to take an impression cup for full denture and fill it with plaster and put it into the mouth, with the view of removing the plaster by cutting sections. The way to do this perfectly is by taking it in the first place in sections. Any one with a little ingenuity can place plaster on pieces of thin lead, adapted to the parts in sections, and take a sectional impression that will produce a perfect model of the parts, however difficult or dovetailing the position of the teeth.

C. S. Case, in Illinois Society.

NATIONAL DENTAL ASSOCIATION.—The first annual meeting of the National Dental Association will be held at Omaha, Neb., commencing at 10 A. M., Tuesday, August 30th, 1898.

Geo. H. Cushing, Rec. Sec.

N. B.—I wish to state, owing to the conflicting stories in circulation regarding the lack of accommodations at Omaha, that I recently visited there to make a personal inspection of the hotels, and found the accommodations ample and rates reasonable.

J. N. Crouse, Chairman Ex. Com.

In regulating teeth you often find the upper central incisors standing apart, especially where the lateral incisors are out of the arch. Dry these teeth clean, then take No. 25 linen thread, wrap it carefully around the teeth three or four times and tie it, you will be surprised to find those teeth are together the next morning, or at the end of twenty-four hours. The philosophy of it is simple, the contracting of the thread when wet brings the teeth together. The teeth, if they do not remain together, can be made to do so by making little bands, soldering them together, cementing them on the teeth, and you will have no further difficulty.

G. D. Sitherwood, in Illinois Society.

General Sherman was once a patient of the late Dr. Bliss. The doctor had been treating him for some time, when one day the General said, "Doctor, I don't seem to be getting any better, for all your medicine."

"Well, General," replied the doctor, jocosely, "perhaps you would better take Shakespeare's advice, and throw physic to the dogs."

"I would, doctor," replied the sick man, as he turned his head on the pillow—"I would, but there are a number of valuable dogs in the neighborhood."

Home Journal.

The election of Dr. William Ernest Walker to the Presidency of the Southern Branch of the National Dental Association is a distinct, though highly merited, compliment to one of the profession's most brilliant and progressive young men. We say "young men" because, though having been actively engaged in practice for a number of years, Dr. "W. E." is, it may be said, yet in "the blush of blooming manhood." But despite his lack of years he is nevertheless one of the most prominent figures in National Association affairs, and consequently in the profession of America.

Plugger Points.

QUICK SURGICAL DIAGNOSES.—A man of genteel breeding and intellectual force remarked recently in Boston, that he wears sewed to his undershirt a card with this inscription: "My appendix has been cut out." And he gave this reason for his action: "You see these are the palmy knifing days of the surgeon. If a man falls into a fit or faints, or is disguised mentally by a drug, and is carried consequently to a hospital, the surgeon operates on him for appendicitis without delay."

Practical Druggist.

To restore decayed and broken-down corners of incisors so they will withstand the usage usually imposed on them by the average patient is one of the highest achievements of a dentist. We had a case recently we will always be anxious about, for we do not think it at all favorable, as the lower teeth incise beyond the upper ones and strike them on their labial surface one-half their length, and have worn them almost half way through the outer plate of enamel. The lower incisors were worn till a deep shoulder existed on the lingual surface. Our main dependence for strength in these fillings is deep, broad anchorage in the thick palatal surface of the teeth.

Texas Journal.

LATE BEGINNINGS.—Arkwright was fifty years old when he began to learn English grammar and improve his writing and spelling. Benjamin Franklin was past fifty before he began the study of science and philosophy. Milton, in his blindness, was past the age of fifty when he sat down to complete his world-known epic, and Scott at fifty-five took up his pen to redeem an enormous liability. Cato learned Greek at eighty. "Yet I am learning," said Michael Angelo, when three score years and ten were past, and he had long attained the highest triumphs of his art.

Success.

Butler, Pa., is one of those hamlets given ephemeral fame by some unique circumstance. The oddity that pushes Butler into prominence for a moment is the bequest of Col. McKee, who devised that \$2,000 should be placed in trust for the Butler School Board, the interest to be used in keeping clean and giving the proper care to the teeth of the public school pupils whose parents or guardians are unable to bear the expense. A proviso of the bequest is that cleanliness of teeth is to be taught in the hygienic course of study, and the School Board has accepted the condition.

Register.

REPAIRING A GOLD CROWN.—Just suppose you have made a gold crown, and in finishing you go through the shell making an unsightly hole. If you undertake to solder this the chances are that you will have three or four holes caused by the solder melting out at the joints. To prevent this trouble, paint the crown all over the outside with whiting mixed thin except around the hole which you wish to repair, fill this with a plug made from gold foil, touch it up with a drop of borax water, and put a bit of gold solder inside, heat it with blow-pipe and success will be the result.

E. A. Randall, D.D.S., in Dominion.

The faculty of the Department of Dentistry of the University of Pennsylvania has recently adopted the following as its standard for the future:

Candidates for admission will be required to present evidence of preliminary education as follows: For the session of 1898-99, a certificate of High School entrance; for the session of 1899-1900, a certificate of two years' High School attendance; for the session of 1900-1, a diploma of an approved High School having a three years' course, or a certificate showing three years' attendance at a High School having a four years' course, or certificates from other schools showing equivalent education. In lieu of such diplomas or certificates the applicant will be required to pass a matriculate examination which shall in each case be the equivalent of that forming the basis of the certificates of required preliminary education.

FOR SENSITIVE DENTINE.—Dry the cavity after having removed as much of the débris as practicable without giving a great deal of pain; then take a piece of soft spunk, dip it in alcohol (absolute alcohol is the best), and then dip the alcohol laden spunk in crystals of muriate of cocaine, place this in the bottom of the cavity and press a piece of unvulcanized rubber against it quite hard for from one to three minutes, then take out and remove the remaining lairs of decay till you thoroughly expose the pulp, and repeat the operation when you will find the pulp has lost all sense of feeling and you can remove it without pain.

Be careful to remove all the pulp before filling as sensitiveness does not return for from ten to fifteen minutes.

A. J. McDonagh, in Dominion.

GOLD IN AMALGAM.—Dr. W. W. Coon, in a paper read before the Eighth District Dental Society, Buffalo, N. Y., says, "I have never found an amalgam alloy that was not improved in the using by the addition of gold. I have spoken of this occasionally to dentists, and in a few instances to manufacturers, and the usual reply has been founded on what has appeared in print,—viz., 'uncertain usefulness.'"

The doctor says that the uncertainty has long since vanished from his mind, as he quite often sees in the mouth of some old patient an amalgam filling that attracts attention because it is better than the others he has inserted in the same mouth, and, in looking it up in his records, finds that gold is the differentiating factor.

International.

EDITORIAL.

ANGER.

Anger is the intoxication of the passions; and like inebriety, by indulgence it grows into a disease. "I cannot help it," says the drunkard; and with equal vehemence the passionate man declares he cannot help being angry, when the occasion pushes him into it.

At first strong provocations are necessary to overcome him, but gradually he is more and more easily provoked till mere trifles unbalance him.

We cannot afford to be angry. It costs us too much of energy and nerve and self-control; and it costs us too much in reputation, character and social standing. It unfits us for every pleasure, unmans us for skilful labor, and embarrasses us in every kind of business. It becomes a weakness that disgusts our best friends, pleases our worst enemies, and lowers us in our own estimation. It is unreasonable, impolitic and demoralizing. It confuses the judgment, entangles the spirits and leaves us prostrate before the meanest antagonist. It really unfits us for life's duties, debauches every manly instinct, and shortens life. Every time a man becomes "white" or red with anger, he is in danger of his life. The heart and brain are the organs mostly affected when fits of passion are indulged in. Not only does anger cause partial paralysis of the small blood-vessels, but the heart's action becomes intermittent; that is, every now and then it drops a beat—much the same thing as is experienced by excessive smokers.

I believe many a man and woman has unfitted themselves for a tranquil, peaceful, enjoyable old age, if indeed they have been permitted to attain old age—by weakening and warping their physical and moral powers through petulance of spirits and irritation of nervous strain caused by indulgence in the passion of anger.

Harmony and restfulness of spirit, strength and equanimity

of disposition, and kindly and lovable affection are unknown to these unreasonable, irascible, touch-me-not, thin-skinned people.

It can be avoided. I used to be easily angered. But about forty years ago I was so completely overcome by this passion that I was almost delirious, and came near becoming a criminal. Then I was determined I would not again be angry; and I gradually found that by thorough training my emotions and making reason supreme I could control myself under the most provoking circumstances, till it is now perhaps twenty years since I have been conscious of being angry.

THE NOMENCLATURE OF PYORRHEA AND ABSCESSSES

Is pyorrhea mainly of the alveolaris that it is called pyorrhea alveolaris? Is it not mainly a disease of the teeth, primarily caused by an accumulation of sanguinous tartar on their roots from associate glands?—the effect on the alveolaris being principally the consequent irritation of the tartar and the abnormal exudation of the diseased glands. If it is principally a disease of the alveolaris, why is it that the extraction of the affected teeth is generally its speedy cure? And why should it be so difficult to cure the pyorrhea while the affected teeth remain, if it is a disease of the alveolaris? In the treatment of this disorder, to what is our attention mainly directed, if not to the teeth? And if the condition of the teeth are not mainly at fault, why are we so hopeful of a cure, if only we can get the teeth in a good condition? That the disease extends to the alveolaris, as also to the surrounding gums and associate glands, is conceded; but who will say the reverse of this, that it is a disease principally of the gums and glands and the invested bone; and merely incidentally extending to the teeth?

Therefore is not our nomenclature at fault in calling this disease pyorrhea alveolaris? Should it not rather be called dental pyorrhea?

There is another abnormal condition that is said to be of the alveolus that has quite a similar diagnosis and prognosis. We

refer to "alveolar abscess." Why are these called "alveolar abscesses" when they are so intimately of the tooth, and only incidentally of the alveolus? If the disease were of the alveolus, why should the extraction of the tooth almost instantly cure the trouble?—and why is it that without its separation from the tooth, mechanically or by medication, it cannot be destroyed? It is a sac on the apex of the root, and has but little attachment to the alveolus. Detach it from the tooth, and away it goes; but you may treat the alveolus indefinitely without killing it. It is true, the abscess affects the alveolus, often dissolving out quite a pocket, and it will penetrate quite through this bone and the adjacent muscle to find an outlet for its pus. But it is very careful to protect the surrounding tissues by making for itself an impenetrable tube. Why then should this abnormal growth be called an alveolar abscess? Would it not be more properly called a dental abscess?

GENIUS *vs.* GREATNESS.

Genius is not usually the sign of a well rounded, symmetrical character. Many whose genius in one direction astonishes us are perhaps inferior in other directions. We can all recall men of whom we have heard some great achievement, or who have genius in some special department of learning or work, who, on acquaintance, have disappointed us. They appear in the main no greater than common people, and sometimes exhibit weak points that almost disgust us. Let us, however, not disparage them; they are filling an important niche no others could fill, and thus the world is advanced by their activities. They are special benefactors. In some one line of thought they are sure to be patient, thorough and persevering, if not successful. Yes, it is marvelous to see how unremittingly they apply themselves to anything they once fasten to. Nothing daunts them, no obstacle discourages them, no failure is a hint that they are beaten. This ought to encourage us; for though we may be conscious of a general inferiority, we may by thorough searching find some strong point that will enable us to do something profitable to ourselves and of bene-

fit to the world. We find even feeble minded persons who exhibit by training great skill in some direction.

Men of genius are generally homely because the development of a single faculty or power sticks out so prominently the others look diminutive in feature as well as in character, while the man of all round greatness is usually symmetrically built.

The energy great men give to many things the man of genius gives to one thing, and he holds on, let what will come. It is difficult for men of genius to explain processes, or to give reasons for what they do or say. It is plain to them, and they cannot see why others should find it dark or difficult. They do not therefore make good teachers. Because of their eccentricities they do not make good leaders, yet few leaders can afford to be without genius.

A genius is a prodigy in his sphere or for some special purpose, but,—yes, there is usually a but somewhere, requiring of us caution, carefulness and perhaps watchfulness in employing his talents.

With our really great men there is a marked contrast to all this. They are well balanced, harmoniously proportioned and cultured. They may be slow of thought and speech and action, but their decisions and plans and compass of what they purpose to do are reliable; they make few mistakes. They are not generally men of tact, shrewdness and quick perception, but their slow calculating processes of reasonings are based upon propositions that seldom fail. They are not brilliant, sharp witted or specially adapted to emergencies, so that they are sometimes disappointing in oratory, and perhaps at disadvantage in repartee and clumsy when immediate decisions are urgent, but for permanent advantage they can be relied on. They seldom take marvelous leaps or show spasms of enthusiasm or inspiration, or suffer intense strain to reach an end; they are more like veteran soldiers with steady march, heavy tread and matured purpose not easily thwarted. They are not generally noted for any one great achievement or unexpected outburst of hidden power; yet we are obliged to accord to them general scholarship, sound judgment and well calculating foresight, philosophical reasoning and mi-

nute, accurate investigation. We can lean on these men without fear of falling; we can sit at their feet and learn in confidence; and we can walk in their steps without stumbling. Their very atmosphere is a benediction, and their unconscious influence is a power. Their superb discipline of themselves brings into order those about them. In every department of life they are what we call "our solid men." Every association, enterprise and scheme with which they are connected is ennobled and advanced by their presence.

All this, and yet our great men are unobtrusive, quiet and retiring,—prominent only when forced to the front; and they do so little that is wonderful they may live in a community without attracting conspicuous attention. They are never in haste, yet accomplish much hard work and plodding; they may feel great responsibility, but seldom fret; in all things they are cool, deliberate and philosophical.

We need both men of genius and great men; and we need men and women who are neither great nor ingenious, if only they act well their parts.

To enjoy life and be successful in the broadest sense we must have something more than a prosperous business: It must include harmonious surroundings, an equitable disposition, and a happy home.

The home life of Gladstone was as beautiful as his public life was grand. For more than fifty years a loyal and affectionate husband; the judicious father of a large family of sturdy, manly sons and gentle, womanly daughters; an indulgent grandfather—these outline the simple records of the private life of the great English commoner, the infinite details of which made Hawarden Castle a modern English home, ruled by the higher order of intelligence for more than half a century.

Brother, how is it in your home?

KERNELS.

The Dental Century is a new dental monthly of fine appearance and good contents. It is published in Madison, Wis., with a fine array of editorial talent. May it prosper.

A movement has been made in Baltimore for a law requiring the examination of children's teeth in the public schools.

For sensitive cavities saturate with chloroform and apply blasts of air at 90 to 95 degrees.

Incipient abscess is often aborted by a capsicum plaster saturated with the tincture of benzoin placed over the gum.

Never complain of the lack of appreciation until you have done something worthy of being appreciated. You hold others to this rule, for you will not trust and esteem them till they have given you proof that they are trustworthy. Remember, your self-conceit adds no merit to your character.

Hot water is a pretty sure relief for the pain of inflammation or irritation. The dentist will often find use for it, to subdue toothache caused by crowning or filling of sensitive teeth, or after pain in extracting. A quantity held for a time in the mouth, repeated a few times, and as hot as can be borne, will be found of great relief. It is also good for hemorrhage.

Officialdom in Germany has been compelled by a bicyclist to give deep thought to the question: "When two streets intersect, in which street is the point of intersection?" At Breslau bicycles are forbidden on certain streets. A rider, going along a street where they are allowed, followed it across a prohibited street and was arrested in the middle of the road. He asserted that he was in one street, the policeman that he was in the other, the lower court that he was in neither and should not be fined, and the upper court that he was in both, therefore on the forbidden street, and must pay twenty-five cents.

"Oral Pathology and Practice," by Professor W. C. Barrett. Published by The S. S. White Dental Mfg. Co., Philadelphia.

Dr. Barrett has been too long prominent to need an introduction; and his writings are too important to need eulogy. In his teachings he is strong, clear and practical, and in this book a real student and skilful operator brings to us the close study and accurate practice of many years.

TWO WAYS.—There are two ways of doing work. One is to go about it with a clouded brow, a lagging step and a general expression of disgust and weariness; the other is to be alert, energetic, bright of countenance, and elastic of step, as if the labor were really enjoyable. The work is done in either case, of course, but there is something in the latter manner that inspires confidence in the worker and assures him of a reward that would not crown his efforts were they put forth in the other way.

Some dentists find it difficult to make a smooth model from their impression. If the model is varnished and covered with soap suds, you will get a very fine model by first besmearing with the finger or a camel's-hair brush the surface with a thin coat of the plaster, and then adding the full amount of plaster required. It is sure to cover every irregularity and to prevent air bubbles, and the skin of plaster is very hard. In mixing, the water should not be added to the plaster, but the plaster slowly sifted into the water as the good housewife sifts her flour.

A new cork pavement is favorably regarded by the municipal authorities in several cities. It is noiseless and soft to the tread, but at the same time durable. It is a variety of asphalt paving, in which cork is substituted for the sand of the ordinary kind, preventing slipperiness, and deadening to an even greater degree the vibrations from passing vehicles. Snow does not freeze to it, and as it is non-absorbent its qualities seem much superior to those of wood pavements. It is said to "stand" on heavy grades on which the ordinary asphalt pavement cannot be used at all, and still afford a perfectly safe footing. For schools and hospitals it would seem to be the ideal pavement, especially for courtyards, playgrounds, and streets around the building. For these purposes, the noiselessness and cleanliness of the new pavement give it a marked advantage.

OIL ON DUSTY RAILWAYS.—Mr. G. C. Wilkins, general agent of the Pennsylvania Railroad, says that the oiling of unballasted portions of the roads, to obliterate dust, had passed beyond the experiment stage. Last year, when it was tried for the first time, he said, it proved such a success that its utility could no longer be doubted. The process had not been extended, he said, because there was no necessity for it. There has been no occasion to sprinkle oil on the track upon which it was sprinkled last year.

SCARCITY OF TIN ORE.—The scarcity of tin ore in the world is pointed out by Geologist B. G. Skertchley, of Australia, in a published monograph. He shows that while known gold fields cover 1,500,000 square miles of the earth's surface, the located tin fields have an area of only 12,500 square miles. The seven tin districts of Europe produce about 8,300 tons yearly, with 8,000 tons of this credited to the Cornwall mines. Asia has two tin districts; Hunan, in China, said by some to yield 10,000 to 20,000 tons annually, but proven to yield less than 2,500 tons per year; and the tin mines of the Straits Settlements and adjacent territory, the richest in the world, yielding 58,000 tons yearly. Africa has no known tin mines; North America has no paying mines; South America mines less than 4,000 tons per year in Bolivar and Peru, and Australia contributes about 6,000 tons a year.

The *Christian Advocate* says of our late dentist in Paris:

The late Dr. Thomas W. Evans was an American dentist who lived for many years abroad, and achieved fame because of his professional relations with royalty. He amassed quite a fortune, and, as was expected, has remembered the city of Philadelphia in a generous manner in his will. He evidently had a great desire to found a memorial institution in Philadelphia in which to deposit his collection of manuscripts, books, letters, royal insignia and other personal possessions, and to that end his will directed that the residuary estate be given to the "Thomas W. Evans Museum and Institution Society;" and it further directs that on a certain piece of property in West Philadelphia, where his father and mother lived and died, and where he himself was reared as a boy, a museum and institution, called the Thomas W. Evans Museum and Dental Institute, shall be erected. A certificate of incorporation has been filed in Philadelphia for an association to carry out the objects of Dr. Evans' generous bequests.

FOR OUR PATIENTS.

THE PAST IS O'ER.

The past is o'er—
Waste not thy days in vain regret.
Grieve thou no more.

Look now before,
And not behind thee; do not fret—
The past is o'er.

Thy pain is sore,
And thou hast cause for sorrow, yet
Grieve thou no more.

Close memory's door;
That day is dead, that sun has set—
The past is o'er.

There are in store
For thee still happy days. Forget!
Grieve thou no more.

Smile as of yore—
No longer let thine eyes be wet.
The past is o'er.
Grieve thou no more!

Chambers' Journal.

OUR CONSISTENT MOTHER TONGUE.

If *S* and an *i* and an *o* and a *u* with an *x* at the end spell "Su,"
And an *e* and a *y* and an *e* spell "i," pray what is a speller to do?
Then if also an *s* and an *i* and a *g* and an *h e d* spell "cide,"
There's nothing much left for a speller to do but to go and commit
Siouxeyesighed.

BUSINESS TEMPTATIONS.—If the devil should appear visibly to any of us,—if he should enter undisguised, with visible horns and tail, and offer you millions for your soul, you would refuse and say: "Get thee behind me, Satan." But when he comes in the form of business, and says, "Do as other people do. It may not be quite right, but everyone else does it. Do not be too puritanical. Be not righteous over much; why destroy yourself?" Then, perhaps, we sell our soul to him for a very paltry sum; and perhaps he cheats us out of that small sum, after all.

James Freeman Clarke.

NOTHING TO ENDURE.

Ruskin sets it down as one of his early calamities, that he had "nothing to endure." A petted child makes an inefficient man or woman. There is no brawn of character without compulsory exertion. The men who sit firm and strong in their social, financial and political positions clambered to them over rough and rugged ways. Misfortune is a rough nurse, but she raises giants. Disappointment is a stern old teacher, with ferrule and hard tasks, but he produces the best scholars. Results are what we are aiming at, and results are worth the most struggling processes.

Attention to the minute is the only way to achieve the great. There is no athlete but has struggled against scores of weaknesses. No man becomes learned except he masters a thousand infinitesimals of knowledge. Frederick the Great knew every soldier by name and conversed individually with his men. Napoleon had mastery in his vast plans because he knew every path, bridge and defile in the country in which he campaigned. Great plans are but confusing dreams unless there be a mastery of details.

Some one has said, "God shows His greatness more by the world a life of success.

Truly, to us He shows His greatness more by feeding young ravens, upholding sparrows, numbering the hairs of our heads than in thunders, and earthquakes, and volcanoes.

One scientist, after long years of closest study of the processes of nature's upbuilding, cried out, "What a painstaking Creator our God is, how infinitely perfect His work!" We look out over a charming landscape and, in our joy, forget the long and aim of life. It touches us and we cannot evade it if we covet

Our conditions, so we say, are not favorable. Our place in life's business is a misfit, and we chafe and waste our energies in minute crystals and atoms of organic life than by worlds." One law with but one single known manifestation suffices to round and swing worlds. But to make a crystal, a dozen laws, with a dozen relations, are required. And for the creation and preservation and activities of the smallest vital organism, inscrutable balancings and adjustments of many forces are demanded. sulky struggles. Give us right conditions, and we could show are detestable, and yet God hath married them together. ages that God's agencies tugged and toiled with it before it was ready for human occupation; but every process of the past ages

was subservient to the higher ends of habitation. So ever does God work. He is not an infinit quiescence, but an infinit activity.

How all such thinking bears on us and on our life-work, on the best. The best costs, and few are willing to pay the price, and few find the prizes. The prizes are enjoyable, the processes the laying of foundations, rearing superstructures, perfecting character! There is an intense personality in the purpose, plan

Alas for our fairy dreams! The bars of gold are but sticks as we confront our real and open day of opportunity; aye, sticks or levers, had we pluck to grasp and use, we could move things and create the coveted success.

We want culture, and so we fancy we must have leisure, and books, and money, and agreeable environment. We say, surely we can't get culture in the hum-drum of every-day duties. There is too much coarseness, and drudgery, and exhaustion. High art demands high life, and mine is low and menial. Culture demands fine clothes, and mine are coarse and soiled in shop, and store, and kitchen. Culture demands leisure, and I am yoked to my drudging tasks all the day and every day. What hope is there for me? What doors of opportunity will ever open for me? Who will ever recognize my worth as I am and where I am? And so doubt and dissatisfaction enter into my spiritual palace and disintegrate my power and destroy my rest. The very elements and conditions that I covet seem to elude me, the things I despise haunt and pester me like forest flies.

A juster thought teaches us our folly. Culture is not from without, but from within. The heart is the secret of the life. The best the world has for us is the best that is in us. That ideal is too low which falls short of the best and divinest. The Christ teaches us that we should bring our highest ideas and noblest aspirations and our most common work into constant vital contact and keep them so. Then the ideal will vitalize the real. Then our flagging energies will take on power.

F. C. Hubbard, in Self-Culture.

PROFITABLE SMALL INVESTMENTS.—A patent for fastening kid gloves has yielded a fortune of several hundred thousand dollars for its fortunate owner, and the inventor of a collar clasp enjoys \$20,000 royalty a year as the reward for his endeavor. A new kind of sleeve button has made \$50,000 in five years for its paten-

tee, and the simple twisting of safety-pins in such a way that there is no possible danger of the point sticking in the child promises to enrich its owner beyond any of his early dreams of wealth. A man one day turned a piece of wire so as to hold a cork more securely in a bottle, and forthwith somebody saw a brilliant idea, and patented the modern wire stopple-holder, which is now used annually on millions of bottles. The incidental bending of a hair-pin by a woman to prevent it from slipping out of her hair so easily, produced a fortune for her husband, who immediately saw the possibilities of a crinkled hairpin for women. *Cass. Mag.*

Paper floors are enjoying a steadily increasing popularity, which is readily explained by the many advantages they possess over wooden flooring. An important advantage consists in the absence of joints, whereby accumulations of dust, vermin and fungi, dangerous to health, are done away with. The new paper floors are bad conductors of heat and sound, and, in spite of their hardness, have a linoleum-like, soft feel to the foot. The costs are considerably lower than those of floors made of hard wood. The paper mass receives a small addition of cement as binder, and is shipped in bags, in powder form. The mass is stirred into a stiff paste, spread out on the floor, pressed down by rollers, and painted with oakwood, nutwood, or mahogany color, after drying.

Self Culture.

Careful experiment has shown that disinfection with formaldehyde vapor is thorough and effective, the vapor diffusing very rapidly and penetrating everywhere, dust on the walls, in the air, and even in cupboards, being almost immediately sterilized. Owing to the irritating nature of the formaldehyde fumes on the mucous membrane and air passages, it is imperative that, after disinfection by this means, currents of air should be allowed to pass through the apartment for a quarter of an hour, and complete removal of the disinfectant should be insured by free ventilation for at least two days.

A. H. Peck, in Review.

Too many clergymen and churches of all creeds; too many convents and monasteries and charitable (?) societies; too many hospitals or too much abuse of them; too many physicians, lawyers, dentists, school teachers and civil engineers; too much "higher education," too many B.A.'s and M.A.'s, many of whom

could not pass a common school examination. Too many who can talk Greek and who do not know their mother tongue. Too many students of all sorts and conditions, three-fourths of whom would serve God, and man better on farms.

Millions of acres of the finest lands in the finest country on the face of the earth, and hundreds of us fools enough to keep our noses to the treadle and strain of the unhealthiest of all the professions.

Dominion.

There are worthy men who object to aggressive reform. Where they discover roguery or rottenness, they want to administer the reproof gentle. Theoretically, they are pioneers of the millennium; practically, they are milk-and-water mischief-makers. In the politics of dentistry they are either on the fence or under it, apologetically pouring oil upon troubled waters as if they were addressing a school class of eunuchs. They think aggression is all wrong, that "evil will cure itself." They do not want to stab the devil in the back, and they will not tackle him to his face, so they display toward him a deferential idiocy.

Dominion.

STATURE STATISTICS.—The different countries of Europe vary greatly in the average stature of their people. The Scotch are the tallest, averaging 5 feet 10 inches on a level with the Polynesians and Armenians. At the other extreme are the southern Italians, French and Spaniards, all the shortest people, except the dwarf tribes of Africa. The average height in Ireland is 5 feet 9 inches; in England and Scandinavia, 5 feet 7 inches; in Wales, Germany and Denmark, 5 feet 6 inches; eastern France, 5 feet 5 inches; in Spain, Switzerland, northern and central Italy, 5 feet 4 inches; in Portugal and southern Italy, 5 feet 3 inches.

Medical Record.

A man with an open mind can never become narrow and rigid, for he has within him the principle of growth. He is like a plant, rejoicing in the invigorating influences of fresh air, sunshine and dew, developing healthfully and shedding its beauty and fragrance on all around. His education is never ended, for he is eagerly learning from every source, and using all possible opportunities of gathering knowledge. The views he has formed, and the truths he has embraced, are never held with that narrow tenacity which holds them back from all frank and free discussion. He is not afraid of putting them to any test, assured that, if they are true, they will stand the trial, and, if not, he can no longer uphold them.

Self Culture.



The dentist who wants the best silver filling hasn't much choice about what he is going to use. He must use High Grade Alloy. There are other alloys made that are good for different things. One may be good for contours; one may have a good color, but we honestly don't believe there is any alloy made that combines all the good features that High Grade Alloy combines. Per ounce \$2.50; 4 ounces \$8.

LEE S. SMITH & SON, Makers,

DENTAL DEPOT,

PITTSBURG.

DENTAL BRIEF.

VOL. III.

OCTOBER, 1898.

No. 3.

ORIGINAL COMMUNICATIONS.

TEMPERAMENTS AND TEETH.

Mrs. J. M. Walker.

The influence of heredity, as manifested in the teeth, affords a subject of study, interesting and instructive.

The different types of teeth and the various molds of jaw distinguish races and nationalities not less effectually than do the color of the skin or the texture of the hair; and in the commingling of races the one can be traced back to a special ancestor as clearly and as unmistakably as the other. As with races and nationalities, so with families and individuals. What we are to-day, we owe to those who have gone before us in the race of life; in the color of hair and eyes, in the general contour of features and form, and especially in the color, size and shape of the teeth, we are what our fathers and mothers, our grandfathers and grandmothers, our ancestors for generations back, have been before us. They have bequeathed to us an undying legacy of flesh and blood, of bone and sinew. What they were we are, and what we are our children shall be. What we are depends upon those who have gone before us; what our children shall be depends upon ourselves in the choice we may make of characteristics to blend with our own as the inheritance of our children.

What they shall be mentally and morally, depends largely upon what they are physically, and what they shall be physically depends upon the inheritance we may bequeath them.

Through ignorance of, or disregard of the laws of heredity, terrible evils are inflicted upon humanity. "This generation is bearing the ills inflicted by the preceding one; we in turn are distilling the poison for the next. * * * What the final outcome will be is beyond our ken, but we may feel a deep solicitude for posterity."

The reproduction of individual peculiarities is nowhere more marked than in structure, form and position of the teeth. Indi-

vidual abnormalities of one or the other parent may be reproduced with almost photographic exactness, or we may see the influence of the blending of the characteristics of both. Dr. McQuillen cites the case of a gentleman having the superior lateral incisors standing within the arch, striking inside the inferior laterals and cuspids. His four children all inherited this abnormality, in the oldest daughter amounting to an unsightly deformity.

Dr. J. E. Miller gives an instance where, in a family of five children, three of them inherited a similar peculiarity in a marked degree; a fourth partially.

In this instance, the upper incisors and cuspids protruded so far that, the lower arch being slightly contracted, there was a space between the upper and lower teeth of nearly half an inch when the jaws closed, the internal cusps of the upper bicuspid striking the outer cusps of the lower teeth.

Dr. Watts relates the case of a family in which the female members for four generations lacked the left upper lateral incisor.

Perhaps the teeth of the father are more frequently reproduced in the children, yet the teeth of the mother, especially unfortunate abnormalities, are sometimes transmitted to her offspring. Prof. Jacobi says a lady who had but two upper incisors, transmitted the deformity to several of her children. Dr. Chase cites the case of a lady with the right upper lateral incisor badly decayed, all the other teeth being sound. Her three daughters all inherited the same defect, with the other teeth sound, two of them having already lost the tooth entirely, the facts being made known to him only when the third daughter came to him to have the tooth filled, and, if possible, saved.

When we see, as is frequently, a dark, stalwart man, with massive frame and sinews of iron, wedded to a fair, dainty little woman, slight and delicate in every way, but each perfect in proportion to size, we are apt to exclaim what a happy blending of opposites, and we think with pleasure of their offspring in whom the physical characteristics of the one will be so happily counteracted by those of the other. And this will probably be the case in many respects, but it is a recognized fact that while children may inherit the general physique of the mother, in perhaps eight times out of ten they will inherit the teeth of the father.

In these unions, the father having large, strong teeth, suited to his massive jaws, and the mother small, pearly teeth in a small, delicate jaw, the children will probably inherit the small jaw of

the mother and the large teeth of the father. Necessarily they would be crowded and irregular, and consequently imperfectly nourished—destined to early decay; a deplorable inheritance, though both parents may have had sound teeth, in properly proportioned jaws. If this be reversed, the children would be likely to have small teeth, with ample space in the jaw for growth and development, and this circumstance would tend largely to counteract an inheritance even of poor teeth from the parents.

Recognizing the importance of these facts, does it not behoove us, as parents, to cast aside all prejudices of false delicacy and, at the proper age, indoctrinate our children, both girls and boys, in these fundamental principles of heredity? Teach them that not mental and moral qualities alone, though these are highly important in themselves, should guide them in the choice of husband or wife; teach them that physical qualifications are of paramount importance. Teach your sons, too, that the mere externals of a sparkling eye or glossy hair, a tapering hand or slender foot, in a woman will not fit her to become a wife and the mother of children. Teach your daughters to know themselves, and knowing their own physical qualifications or defects, to know also what they require in a man to fit him to be not only a husband to be loved for himself, but also to be a father to be honored in and by his children.

PREPARING CAVITIES.

Dr. W. E. Driscoll, Manatee, Fla.

In the DENTAL BRIEF for August, is an excerpt from the *Digest*, written by Dr. Chas. L. Johnson, in which he says: "I cut the vertical walls back to such a position that the juncture of the filling and enamel edges are kept clean by the natural motion of the tongue and cheeks. I cut the cervical wall down to such a position that the juncture of the filling and enamel is over-tapped by the gum." As he mentions no exceptions, and advocates this heroic style of operating, it seems fair to suppose he would enlarge the smallest cavities to such size and form. Others have advocated the same course. If the decay approaches near such limits, I believe the practice to be good, un-

less it be to extend the excavation below the gum when sound tooth substance has to be cut away to make the extension. Then I would say no, emphatically. At the cervical border I would save all that is sound, and have always considered it a misfortune if I have had to go under the gum, and I believe most also consider it a misfortune if the tooth is neglected till such a condition is unavoidable.

And I must say I have found it impracticable to enlarge small cavities at the labial, buccal, lingual and palatal aspects, so as to make them self-cleansing by the natural motion of the lips, cheeks and tongue. If such practice was best, there are few people who would consent to such wholesale cutting, or to such extra charges as the enlarged fillings would make necessary.

Such advice has been presented through our journals for many years, and I do not recollect of having ever seen any adverse comments on the plan. Hence I join issue with the writer, to the extent stated, and say that as a rule his suggestion is not the best for the patient from any point of view. And instead of being constantly advocated without a challenge, it should be condemned for the reasons stated.

The suggestions of this writer seem to me to be of a class where one is betrayed into advocating what he considers would be an ideal course; but it will be found impracticable as soon as we try to apply it.

There is a lofty sound about the description of a practice that makes the dentist entirely independent of the financial condition of his patients, and also of any preference they may express about what is done on their teeth. I do not believe there are many in the profession who make large cavities out of small ones when the patient objects. Nor do I believe many refuse to allow the patient to say what kind of material shall be used in filling teeth or making plates.

This thing of forgetting the cold, practical facts of dental practice is illustrated in another way. In the presence of members of the profession it is very easy and natural to vow eternal fidelity to a good liberal fee bill, and possibly in the presence of the first patient who insists on a reduction, surrenders and breaks all his solemn pledges, and is glad to do so provided such cupidity secures the patronage.

The man who never slips under some of these temptations is indeed a strong character. It is such times that try dentists' souls. But we are never too old to learn, and never too perfect to err. We cannot be judged to-day by what we were yesterday.

ABSCESS OF THE ANTRUM AND THE DANGER OF LEAVING TUBES IN TOO LONG.

Dr. E. W. Bonwill, Rangoon, Burma.

Seven months ago Lieutenant-Colonel —, of the British army, stationed here, came to me suffering from a most severe abscess of the antrum. The Colonel had just come from the front, where his regiment had been doing active service in the war with the natives in Northern India which has just ended. I must also state that the Colonel had been in the hands of all the army medical staff; also in Calcutta. He had stopped on his way down, but could get no relief. The army medical staff here in Rangoon could give him no relief, and my opponent here, an English dentist, told him he really did not know what the trouble was or what to do for him, but he thought there was trouble in the brain, as so much pus was coming through the nose. So they had decided he had better return at once to London and go through an operation. A friend recommended him to come to me. He therefore got a letter from his doctor, Surgeon-Captain —, stating he thought it was an abscess, caused by a tooth. I at once made an examination, and told the Colonel I was exceedingly sorry to have to disagree with his very learned friend, but the cause of abscess was from catarrh, no tooth being involved. I gave him a letter to the Surgeon-Captain, giving my diagnosis, and saying it was a case for a surgeon, and asking if he would operate. The reply was: "Thanks, awfully, old chap, but you have the case in your hands. I suffered for six months myself in Shanghai, China, and at last had to return to England for treatment."

Dr. Richardson (an American) gave the chloroform, and in a few minutes I had a tube inserted into the antrum, over the cuspid fossa, and washed the cavity thoroughly with warm water and listerine. I kept the tube in place by tying to a molar tooth. The treatment for the next ten days was a wash every day with bichloride of Hg and boracic acid. I used my microscope, each day taking on a glass, the first drop and the last, and making an examination to see if there was any decrease in the number of pus corpuscles. The terrible odor was entirely gone after two days. This washing continued for four weeks, when I discontinued the use of the bichloride 1-10,000 and used only warm water containing listerine and boracic acid. There was now a great decrease of the pus corpuscles. I have neglected to say that the tube was thoroughly cleaned each day. At this stage

the Colonel was ordered on duty for three days (some special occasion), and the tube did not get washed, so when he returned to my office I found a great flow of pus and mucus. He had washed the antrum with syringe twice daily with warm water while on duty. So I saw the tube was irritating and causing pus. I at once cleaned thoroughly the cavity, took out the tube, and in twenty-four hours the opening had healed beautifully. In two weeks later I got him to blow his nose. I at once put the mucus under my microscope, and could not find one corpuscle. He is perfectly well to-day.

I had another case of abscess of antrum four weeks ago, caused by first molar. I extracted the offending member, inserted rubber tube, washed cavity for five days with nothing but warm water and boracic acid. At the end of the week I took the tube out and found the abscess gone. Patients are not as easily cured in the tropics as they are in their native climates. Everything is against them—the terrible heat, the food, the wet weather (which lasts night and day for six months)—so that the usual treatment at home is worthless here.

This is so with all cases of abscess of the antrum. I use the microscope from start to finish, and keep the tube in use longer than necessary. I have had a number of the antrum troubles since I have been in the East, and I am happy to say I have not had one failure.

GELATINE SUBSTITUTE FOR GLASS.—The *Scientific American*, in commenting upon the new substitute for glass, tectorium, says it has been found satisfactory in Germany for the following reasons: (1) It can be bent without being broken; (2) is both tough and flexible; (3) is not softened by the rays of the sun; (4) is non-soluble; (5) is not affected by severe cold; (6) is a bad conductor of heat; (7) is well adapted for roofs, on account of its extreme lightness; (8) when exposed to the sun it loses its original yellowish color in time and becomes harder and more durable; (9) can be made, by a very cheap process, to imitate stained glass in such manner that it cannot be distinguished from the genuine article; (10) can be cut by shears, nailed to wood, and transported without danger; (11) can be easily repaired in case it is cut; (12) does not break, and (13) is well adapted for factory windows and skylights for hot-houses, market halls, verandas, transportable buildings and for roofing. It is further stated that it has at yet only been sold in small quantities and in a few places, the product still being an experiment.

REPLY TO "THE PROSECUTION OF A DENTAL STUDENT."

Dr. Earle C. Rice, Philadelphia.

I have just finished reading an article in the BRIEF, entitled "The Prosecution of a Dental Student," and I am much surprised at its outlandish sentiment. The writer of the article must know that no man should be permitted to practice dentistry until he has passed a course of study as prescribed by law. Even if he has a poor mother, there is no reason why he should not be reported to the "Board;" in fact, it is the duty of all practitioners to report such cases, and they should be upheld in so doing. Let me quote from the article: "One of them—whether with the connivance of the others we know not—reported him to the President of the Examining Board (oh, how honorable)!" It was honorable and will always be honorable to report men who violate the law. The dental laws were made to protect the people from the operations of inexperienced men, and it is contemptible to decry a man who reports a *first-year* man who has the impudence to think he knows enough to go into practice.

Dr. Earle C. Rice, Philadelphia.

[I have had some experience with students at dental colleges, for I have assisted ten to graduate—there are two of my proteges at the Pennsylvania University now. I do not recall one who has not done dental work while out of college. In three instances it was by the specific permission of one of the professors of the college of which they were then the students. In fact, he advised them to do the more simple dental operations that they might have a practical idea of what they had been taught. Of course, this professor had no right either to permit or advise such a course, but it proved eminently beneficial. From my observation during the last thirty-five or forty years, I believe most dental students do some dental practice during the interim of college sessions. And I believe they are better off in their college studies for doing so.

I go farther than this: I do not favor young men going to college without first studying and working in a good dental office for at least six months. And not as a mere choreboy, either, but actually doing dental work and becoming proficient in the simpler studies of the profession. I have thus prepared several, and in every instance it has proved of great advantage.—EDITOR BRIEF.]

LIGHTNING.

From *Electricity*, by E. M. Caillard, are taken the following bits of information:

A flash of lightning is thought to last about one ten-thousandth part of a second.

One consequence of the short duration of a flash of lightning is an apparent diminution of its brilliancy. It has been proved that light cannot produce its full effect on the eye unless it remains at least as long as one-tenth of a second. But since lightning lasts only one ten-thousandth of a second, it follows that we see it one thousand times less bright than it really is.

Were lightning seen with its full vividness, no human powers of vision could endure so overwhelming an illumination.

There is some evidence, however, chiefly photographic, that occasionally, at least, lightning flashes endure longer than is commonly supposed.

The shape of a flash of forked lightning varies according to its length. The cause of its irregular path lies in the tendency of electricity to take the path of the least resistance; it would rather go round an obstacle than break through it.

A single flash of lightning will sometimes divide when it strikes an object, and take two, or even more, different paths for the rest of its journey to the earth.

Lightning sometimes plays between two clouds which are differently electrified, and it is then harmless. But more often its play is between the clouds and the earth, and then it is a source of danger, though, fortunately, one which we have learned to protect ourselves against by means of conducting rods.

Never stand under a tree during a thunder storm, nor near an open window, nor near objects made of metal.

Sheet lightning presents the appearance of a broad flash, emanating from the edge of a cloud. No object on the surface of the earth is ever struck by it. It is simply a discharge between cloud and cloud.

Occasionally sheet lightning is seen on a clear sky and unattended by thunder. It is then often called summer or heat lightning. This is no doubt the reflection of flashes from a storm below the horizon and too distant to allow the sound of the thunder to reach the ears of the observer.

Thunder is supposed to be due to the sudden and violent expansion of the air caused by the enormous heat developed in the path of the lightning. The rolling sound is occasioned partly

by echoes from the different surfaces of the clouds and from strata of air of different densities, and partly by the great length which the lightning flash sometimes attains. The flash is practically simultaneous along its whole path, but since sound takes a very much longer time to travel than light, moving at the rate of only about 1,100 feet a second, the noise of the thunder, coming from different distances, is thus prolonged for some moments.

By noting the interval between the occurrence of a flash of lightning and the first sound of the thunder the observer's distance from the disturbance can be estimated. An interval of five seconds, for example, means a distance of 5,500 feet—a little over one mile.

PULASKI, VA., August 25th, 1898.

Dr. T. B. Welch, Philadelphia, Pa.

DEAR SIR:—I have a patient, a girl about 15 years old, in whose mouth I have put several amalgum fillings, and under each I put a coating of gutta-percha, also on upper central, which I destroyed the pulp of, and filled the root with gutta-percha, and the crown cavity with gold.

I supposed that the teeth would remain comfortable, but on the contrary they are just as sensitive as ever, and have been even since they were filled, three months ago.

None of the cavities were large, and none were near the nerve.

Not only are the filled teeth sensitive, but the teeth which are perfect in every respect are just as sensitive.

I confess I don't know what to do, so I write to you in the hope that you will be able to throw some light on the situation through the columns of your delightful little monthly visitor, the DENTAL BRIEF.

J. H. Wool, D.D.S.

Who will give light?—ED. BRIEF.

The newest profession introduced for women who are poor, educated, and well-mannered is that of "denticure." The "denticurist" takes care of her fair clients' teeth, giving them the skillful cleansing with dental instruments which is usually done by the dentist, and which must occasionally supplement the personal attention received daily from the owner's own brush, dentifrice, and floss.

LIQUID AIR.

The editor of the *International* attended an exhibition of liquid air by Prof. George F. Baker, at the University of Pennsylvania, and thus describes what he saw:

"The novelty of seeing air dipped up by a ladle from a can, not unlike, from outside appearance, to a milk-can, was astonishing. The can resembled an ice-cream freezer in appearance. The inner can contained the fluid air, and between this and the outside can heavy felt was packed.

"The experiments which followed were all intended to show the intense degree of cold produced by the liquid air. Paraffine, when immersed in it, became in a few moments as white and as brittle as chalk. Rubber tubing was made as friable as glass. Tin would be affected similarly, but no effect was produced on copper. Beefsteak and an onion were frozen so thoroughly that they were readily crushed between the fingers. The familiar experiments with oxygen were repeated, showing the power of fluid air to support combustion. Mercury was frozen so hard that it became malleable under the hammer, and solid enough to drive a nail in a board.

"While liquid air is not a new product, it has heretofore been produced only in small quantities, and at such great cost that it remained simply a scientific fact. Whether the certainty that it can be produced in unlimited quantities will make it of commercial value remains to be seen, but no doubt such will be the result.

"That this production of liquefied air is one of the most interesting facts in modern science remains without dispute, and it will no doubt soon be seen in all scientific educational circles, and, like the Röntgen ray, become common knowledge and, perhaps, like it, of equally practical value."

One reason of Gladstone's greatness was his age. He was always able and brilliant, but time is required to produce such a mighty oak in a forest of commonplace trees. He was a growing man—always growing. His roots were as wide as his branches and as deep as the latter were lofty. He derived nourishment from a thousand hidden sources, and he kept growing through all the years. By conserving and developing his physical powers he took time to become great. There may be genius in youth, but there can be no greatness like Gladstone's without age. Let ambitious young men profit by his example.

OUR QUESTION BOX.

With Replies From The Best Dental Authorities.

[Address all Questions for this Department to Dr. H. Beers Hickman, No. 719 N. 17th Street, Philadelphia, Pa.]

Question 1. (a) *Can absorption of alveolus be hastened after extraction so as to obviate the use of temporary denture and permit of a permanent one being inserted within a short time?*

(b) *Is this process impervious, and is it better to await the slower process of nature?*

(c) *Would it be wise to trim the alveolus; if yes, what instrument should be used?*

(a) *How long after such treatment can the denture be inserted?*

(a) The time cannot be shortened much. The gums will become smoother more quickly if the sharp projections of the alveolas are trimmed.

(b) I prefer the slow process of nature.

(c) Use bayonet-shaped alveolar forceps to trim projections.

W. F. Schwaner, Winterset, Iowa.

(b) I rely on natural process of absorption, and consider any other method unsafe.

(c) The mechanical trimming of the alveolus, to fit the mouth at once with a permanent denture, is unwarranted and impracticable. It is better, when possible, to avoid the use of a temporary plate.

E. P. Stiles, D.D.S., Austin, Texas.

(a) (c) Trim process with an alveolar forceps. It is not a painful operation, and can be done while the patient is under the anæsthetic. In fine cases a temporary denture is most satisfactory to patient and dentist.

(d) It is customary to wait three or four months—sometimes six. In partial cases we have had best results by taking impression, and making plate before teeth were extracted, inserting it immediately after extracting, and before soreness or inflammation has begun.

Charles B. Baker, Bridgeport, Conn.

(a) I know nothing that will cause so rapid absorption as wearing a denture. A temporary plate should always be worn, as it not only causes more even and solid alveolus, but preserves the muscular control of articulation, which becomes almost completely lost or changed, even after a short time without teeth.

(c) I only trim the alveolus when all the teeth, but one or

two, have been lost long enough for absorption to have taken place, leaving a ridge or raised socket for remaining ones. Then on extracting remaining teeth you can excise raised sockets and insert plate immediately.

H. G. Saunders, Chattanooga, Tenn.

Question 2. (a) *Is aluminum so affected by secretions of the mouth as to become brittle or soft after being worn a few years?*

(b) *How long will the average aluminum plate last?*

(b) From three to five years.

Charles B. Baker.

(a) Aluminum is readily dissolved by almost any strong alkaline solution. Its lasting qualities are altogether dependent on the condition of the saliva. Early in its use, we were accustomed to think the cause of pinholes, etc., was the impurity of the material; but now think it caused by an alkaline reaction of the saliva.

H. G. Saunders.

(a) If aluminum in any way proves unsatisfactory, as now used as a base for dentures, it is due to impurities, either originally in the metal, or through contamination in careless swaging, or annealing before cleansing. I would suggest non-mercuric dental rubber in making rubber attachments to aluminum.

Wallace Clyde Davis, D.D.S.

Question 3. *A lady, aged forty-five, had all teeth extracted two years ago. The ridge is very soft and gums so inflamed it is impossible to wear a plate. A plate made fits tightly some days while it is very loose other days. I have tried black rubber. What is best remedy?*

Look to general health of patient and use antiseptic mouth wash. Do not think color of rubber makes much difference, though black would be preferable. Sometimes plate without palatine portion works to an advantage.

If any kind of plate irritates the mucous membrane of mouth it will produce inflammation if general health is not good.

A. Williston Davisson, Atlanta, Ga.

The effect of black or brown rubber would be the same. The supposition is that the patient wears the plate nights. Very few patients can wear a tightly-fitting plate twenty-four hours a day and have a healthy mouth.

Should leave the plate out nights, and rinse the mouth often with cold water, brushing the entire surface of mouth with soft brush whenever the plate is removed. If this does not give a healthy mouth, leave the plate out part of the time during the day.

A. F. Davenport, North Adams, Mass.

CURRENT THOUGHTS.

SOME GOOD ADVICE.

Dr. B. F. Arrington, Goldsboro, N. C.

Scrupulous and appropriate cleanliness of person, office and instruments, daily observed and religiously practiced, will very greatly diminish necessity for use of disinfectants, sterilizing agents, etc., to check progress and destructive features of the harmless little armies (much magnified) of microbes, bacteria and the like, seemingly a great terror to some dentists, who would doubtless be more practical and useful as dentists if their thoughts and energies were applied to something larger. It is best never to "strain at a gnat and swallow a camel." The question is yet to be settled, whether the presence of such minute animate matter is designed for evil or good. If for evil, we are gone up, unquestionably, for there is no getting at the fountain-source to exterminate. They are legion, and everywhere; always have been, and possibly always will be. They are of God's creation, have a service to perform, and while performing merit a living; let them have it. Teeth and gums treated and teeth filled forty and fifty years ago—long before the germ and microbe theory, sterilizing instruments, etc., were sprung and advocated, as for some years* past—was a success, and no evil consequences followed any more than at present.

Never use more remedies in practice than requisite, and never persist in the use of a remedy as superior to others until you have compared and faithfully tested for merit.

Use gum-lancet freely for relief of children during teething period. Much relief will be afforded and death prevented sometimes.

Never cut around teeth or roots to be extracted if forceps can be successfully applied without it; but if you have to cut, cut for effect, and be sure to get a secure hold before attempting to extract, never losing sight of the fact that in the operation of extracting teeth a rough success is more appreciated than a delicate failure.

Never attempt the filling of proximal cavities until ample space is provided; and in filling deep cavities with gold or amalgam be careful to protect base of cavity with some reliable non-conducting material, to avoid injury to pulp and consequent discomfort.

The preparation of cavities for any filling material should be the same in every particular, and the same care in introduction of material and finish of same should never be slighted, lest evil consequences should follow.

The desire and ambition of every dentist should be excellent results, if possible to be attained, not only in filling but in every service rendered for health and preservation of gums and teeth.

Never stuff cavities with amalgam or gutta-percha at the commencement of filling; small quantities carefully manipulated for perfect adaptation and solidity, and to insure freedom from leakage, is safest practice. All filling material should be carefully inserted and finished.

Never rush operation to make rapid headway; if you do, failures and complaint may follow quickly.

In the use of gutta-percha or amalgam strive for best results possible, as in the use of gold. You will preserve more teeth and will think better of yourself as a dentist, and your patrons will think better of you.

In shaping cavities, nearly perpendicular walls, with slight underslope, is surest guarantee for retention of fillings.

Never jeopardize pulps by making retaining pits. A cavity rightly shaped will hold filling without the aid of retaining pits, therefore the use of them should be discarded.

In rendering service for preservation of teeth always consider the interest and comfort of patients more than self; otherwise, much you do will be unreliable and will cause dissatisfaction.

You can and may safely venture to vary in selection and use of material, but manipulative ability and skill must be applied the same under all circumstances and conditions, or there can be no dependence in service rendered.

Never attempt to crown or bridge on roots defective at apex; if you do, it will be safe to predict failure, and evil consequences will follow in a limited period, and patients will realize that there was dishonesty or want of good judgment and skill, either of which would prove hurtful to the dentist and lowering to the profession.

Integrity and skill must couple in all work for preservation of teeth; the principles of the "golden rule" should guide.

Never advocate a principle in theory, or any line of practice as exactly right and correction or improvement impossible, but think and act independently and strike out boldly, analyzing and experimenting for results and facts; and if obtained results, re-

peated and well established, conflict with previous teachings and preconceived ideas, hold to results, advocate and herald them, and practice accordingly. It will be better for you, better for patients, and better for the profession, for it is the only sure way to lift out of old ruts and make successful progress.

If you have commenced practice inflated with the idea of high prices and rapid gains, be undeceived, for there is only so much for you, if you follow, as you should, an honest professional line of practice. Possibly nine out of ten (a fair average), if endowed with fair attainments and skill and becoming professional bearing, and close application to office duties, may reasonably hope to meet expenses (legitimate) annually—very little, if any, more.

Ten years hence the prospects for profits will be less encouraging than to-day, and many, possibly, will wish they had never embarked in the practice of dentistry. *Dental Weekly.*

THE COUNTRY DENTIST.

Dr. J. A. Pearson, Barton, Vt.

The sphere of the country dentist to a great extent is that of a pioneer or missionary. When work is being done for less than good, conscientious, honest work can reasonably be done for, the quality of it is quite likely to deteriorate with the price. I can see no reason why the country dentist should not and cannot receive a proper remuneration for his services, provided he is up with the times and the community in which he is located appreciates and understands the advantages derived from dentistry. It must be borne in mind, however, that many of us are practicing in localities so situated we seldom receive a call from another dentist or come in contact with others in the profession, thus losing the stimulus generated by social intercourse and interchange of thought with one another, therefore we must make a greater effort to keep in touch with the times or we will fall short of what we might be. It is discouraging to plod along year after year in a community which, as a whole, are ignorant of the advantages derived from our profession, only so far as to relieve them of an aching tooth by extracting it, when it should be saved. The only question being asked when told they should be saved by filling is, what it will cost, and will we warrant them to last as long as they live? if not, they might as well have them out now as ever. When they bring a child to have the first molars extracted and

we tell them they are permanent teeth and should be saved, they emphatically inform us we are mistaken; they are certainly temporary teeth because they had theirs out and have others in their place. They go from our office fully convinced we do not understand our business, or we are trying to get their hard-earned money by filling temporary teeth, not realizing if they were temporary teeth we were conferring on the child one of the greatest of blessings, so they leave us and feel glad they have not let us fool them, and we are left to ponder and wonder.

I do not wish to convey the idea that all of our patients are like these, for some are very intelligent, who fully appreciate our efforts to serve them—and who does not appreciate a good patient? But far too many of our patients are so ignorant of the first principles and benefits derived from dentistry that we are sometimes discouraged in our efforts to do our best for them. Perhaps some of you who have a good practice among people that understand the advantages derived from the proper care of the teeth, will say, "Let them go." We cannot afford to, for we need their business and they want our work as well as your patients do yours, did they understand the benefits derived from it. There should be an effort made to educate the masses and show them the importance of the teeth to perfect health. Were the people as a whole as well informed on this subject as they are on the general questions of the day, there are not one-half dentists enough to supply the demands for work at good prices. I think our local papers should be induced to publish short articles on the importance of the teeth and their care. It is very slow business for the dentists to educate the people, coming in contact with comparatively few of a community and talking with them a few minutes when they are half credulous, wondering if we are really telling the truth or are after the work.

There is no reason, with the dental journals published, why the country dentist in his usual leisure hours should not be well informed on what is going on in the profession. There are many good reasons why all dentists should become members and contributors to their State Dental Society; their annual dues are needed to carry on the work of the society, so the executive committee may get the best talent possible as demonstrators and essayists at our annual meetings. By attending its meetings we come in contact and become personally acquainted with some of the best men in the profession, men whom we should consider it an honor to know. Often we become intimately acquainted with our neighboring competitors whom we have never met, and know

them only through some of their disaffected patients, who portray them to be wretches unworthy of consideration; but when we see them face to face we learn they are men, whole-souled, honest and glad to aid us in any way they can.

I believe the country dentists are trying to do honest work, and a great deal of their work will compare favorably with any. Amalgam and gutta-percha are a boon to the country dentist, enabling him to do good, serviceable work at the prices he is obliged to charge. There is no reason why the country dentist should not be just as thorough as if he was practicing in a city, and sometimes more so, for often he can take all the time he wishes, and perhaps he had better, for if done too quickly the patients may think he is overcharging them. We should not be afraid to acknowledge it when we cannot do a class of work and do it right. We should be frank and honest with our patients, and if they wish for work we do not or cannot do, tell them so, and assist them to get what they want by sending them to some reliable dentist who does that class of work. In doing this we simply act the part of honest men and do not degrade ourselves.

Digest.

AMALGAM AND CEMENT AS A COMBINATION FILLING

F. W. Knowlton, D.D.S., Akron, Ohio.

In the cavities in the bicuspid and molars in teeth below medium in texture, there is no filling that proves more successful for the comfort of the patient and the preservation of the tooth than amalgam and cement in combination; provided, the same care and attention is given such work as is necessary in all operations pertaining to filling. In this combination the more desirable properties of each material are retained and some of the undesirable ones eliminated.

The cement lining the cavity gives perfect adaptation and prevents any discoloration of the tooth, while it supports the walls better than any other filling and to some extent cements the filling to the tooth. The amalgam as a capping prevents the cupping and wearing out as in a filling of cement alone and makes a permanent out of an otherwise temporary filling. The results are so satisfactory that such work merits a more general use in the teeth designated than is usually given.

The cavity is prepared in the usual manner, not depending wholly on the cement for holding the filling in place when there

is any strain on the filling during mastication. If the cavity comes in close proximity with the pulp, a thin piece of asbestos paper, cut the proper size and one side covered with antiseptic varnish, should be placed over the pulp, the varnish holding the paper in position and assisting to protect the pulp from any deleterious influence the cement might have on it. Place the powder and liquid on the glass slab and roll a small pellet of cotton very tight so there will be no loose shreds of cotton remaining. Mix the amalgam as usual and wafer a portion of it. Now mix the cement a trifle thinner than for a cement filling, and place enough to partially fill the cavity with the spatula and, taking the previously prepared pellet of cotton in the pliers, spread the cement against the walls of the cavity with a single pressure; if done quickly it will cover the cavity nicely and not stick to the cotton. Now place some of the amalgam in the cavity and with ball bur-nisher work the amalgam into the cement, at the same time working the surplus cement to the margins of the cavity when it must be thoroughly removed with excavators so there will not be a particle of cement left exposed at the completion of the filling. Fill the remainder of the cavity with the wafered amalgam and finish as if it were an ordinary amalgam filling.

Ohio Dental Journal.

THE PAST AND PRESENT IN DENTISTRY.

C. N. Peirce, D.D.S., Philadelphia.

It has been stated that the evolution of languages, regarded as a psychological process, is largely determined by social conditions.

The following inquiry seems pertinent: Is there a profession, an industry, an enterprise of any kind affecting the human family that has been so shackled, so embarrassed, so handicapped by social conditions as the profession of dentistry? Compare its position with that of the obstetrician, the ophthalmologist, the laryngologist, or, indeed, any specialty of medicine; socially it is in the shade. Is the limited education possessed by the masses in the profession an important factor in this? Or is it the occupation itself which places a stigma upon the character of a dentist regardless of other conditions? It has been said by a prominent dentist that within the limits of the dental profession there are men so skilled in medicine and the arts that, were those pursuing the latter stricken with paralysis and the former disabled by acci-

dent, their ranks could be so quickly filled by members of the dental profession that the ripple upon the wave of society would be but temporary indeed. However this may be, there are those in the profession whose intelligence and education should be a passport admitting wherever they desired, without question or comment. Believing in evolutionary processes, and that dental education in its development is not unlike other growths, its votaries have been persistent in their efforts to advance its status from the simple to the complex, from the elementary to the scientific; yet there have been periods in this progressive stage that may be denominated as expressions of degeneracy.

A hasty glance at the condition of dentistry and dental education fifty or seventy-five years ago, and a comparison with its condition forty or more years later, or at a more recent period, will demonstrate the marvelous change.

In early times an applicant for instruction was charged a fee, the amount of which was in an inverse ratio to the time to be spent in obtaining the desired information. Six hundred dollars for three months, or two hundred for twelve, was not an unusual fee demanded and paid.

The value to the prospective dentist of this economy in time was almost without price, for in a few months his fortune was supposed to be secured. Nor could the preceptor be more jealous and careful regarding the character of the one to whom he was intrusting the secrets of his laboratory and admitting to his office to watch the movements of both patient and operator. The result of this care brought men of character into the profession.

In 1846, when the first dental college opened for the reception of students, it was regarded with but little favor by those whose annual income had been materially augmented by fees given for private instruction. In order that the college should enjoy the patronage of a sufficient number of students to pay interest on the outlay and necessary expenses, it was quite incumbent on those conducting the enterprise that very limited requirements in anatomy, physiology and chemistry should be exacted, and also limit in time required to obtain a degree and an attesting parchment. But, limited as it was, it was an advance in the opportunity offered for thorough, honest teaching in the practical branches,—operative and prosthetic. One important element, however, was eliminated,—the personal contact with and the influence of teacher upon pupil.

Within six years from the establishment of the first school, with fifty students in attendance, three were in successful opera-

tion, with a patronage of a little more than two hundred students in the three. In 1870 five schools had been established, their combined classes numbering but about, or less than, three hundred students, while in 1896 the country enjoyed the disgrace, shall I say, of fifty-eight dental schools, with over six thousand five hundred names on their matriculating lists.

That one or more schools with centers and agents for the sale and distribution of diplomas have been established in this country is a well-recognized fact, but it must be remembered that these have only been in response to the demand for a parchment giving the holder thereof the right to practice dentistry. Hundreds of these unearned documents have been distributed over this as well as the various countries of Europe, thereby increasing the number of charlatans in the profession, and helping not a little to sink it into that slough of despair and degradation in which it is now involved.

It was the activity of this villainous practice that led the dental profession to seek regeneration and protection in State examining boards. These were to be the "antitoxin,"—the source of redemption; much was anticipated, hoped for, by many sincere and able men in the profession. Before making the inquiry as to the extent of the remedy secured from these examining boards and the realization of the hopes of their originators, let me pay a well-merited tribute to the integrity, honesty and singleness of purpose of the professors and teachers conducting many of our schools. Men more devoted, more earnest in their advocacy of, and in their efforts for, the advancement of the dental profession are not to be found. This is well illustrated in the adoption as rapidly as possible of a broader curriculum, an increased length of each session, and an addition to the number of sessions required before a candidate for graduation could be admitted to final examination. This speaks emphatically for such schools, and demonstrates the purpose of the faculties in charge.

In recurring now to the inquiry regarding examining boards: Have they given satisfactory evidence of a due appreciation of their responsible position? Has their influence been for the protection and encouragement of the best schools? Are the men composing the boards as well versed in the science and art of dentistry as the professors in the best schools? Have they given evidence of any better, or as great an interest in the advancement of the profession? Are they men of equal scientific attainments, or of a higher, unswerving moral character? These are pertinent questions. What the profession—the higher element

in it—has a right to demand is that competent, conscientious teachers shall be protected against charlatanism in any form, and that proficient students, recent graduates, well educated in all departments, shall be dealt with justly,—shall be relieved of a rivalry with the ignorant and unscrupulous. The truly professional men, and teachers, are discouraged, not to say utterly disheartened, at the commercial spirit which pervades educational institutions to-day. The atmosphere of barter and sale infests the class-room, and high ideals in the pursuit of a chosen profession are not encouragingly present in the majority of students.

In a dental school the recital of a practical case, or the description of a manipulative process, has every ear and eye; not a word or movement to be lost. But the origin of a structure, the etiology of a disease, the evolution of a form,—not having a fee apparent or prospective,—is a matter of inattention and indifference.

Have the examining boards tended to remedy this evil? Have they encouraged the student to ideals? Do they estimate the value of well-grounded principles and urge to proficiency in such? Or, are they not, at least some of them, burdened with the same commercial spirit, seeing no value in anything save possessed of an earning capacity?

The position of a critic is an unpleasant one, but when devoid of personality or malice may stimulate to improved conditions.

A student having completed only the first year's course in college, after an examination by a State Dental Board, received the following certificate:

"It gives me great pleasure to inform you that your examination before the Board was satisfactory in every respect, and I have been instructed to express to you the appreciation of the members of the Examining Board as to the high standard of the work which showed such careful and thorough preparation on your part, and at the same time to congratulate you on the fact of your being the first applicant who has come up under (the five years' clause) our present arrangement who has passed the examination at his first examination. We wish you the greatest success in the profession you have entered under such favorable auspices."

(Signed by Secretary of the Examining Board.)

This certificate naturally led the holder to believe it insured entrance into the senior class, and for that purpose was presented to the dean. This application was positively refused, but that the applicant might also be convinced of unfitness for such promo-

tion was asked to submit to an examination in physiology, after which the request was not repeated.

A graduate of more than usual merit, having received a diploma, which was shown to an Examining Board, passed before the Board all examinations satisfactorily, at least was so informed by a member, who also extended personal congratulations, and requested a friend to write a letter to the successful individual "expressing in complimentary terms the satisfaction given the board."

A few days subsequent to the personal interview and reception of congratulatory letter, imagine the young man's surprise at receiving the following from the Secretary of the Board:

"DEAR SIR:—I regret to inform you that your examination before the Examining Board was not satisfactory, and it will be necessary for you to refrain from practicing dentistry in the State. You will have an opportunity for a reëxamination."

(Signed by Secretary of the Board.)

(Date in July.)

This correspondence was shown to a man of prominence, an ex-representative, and three days thereafter the applicant received the necessary certificate, and without another examination or waiting four months for it.

These facts are certainly evidence of the absence of any fixed principles, or of a settled policy on the part of the Board to advance the status of the profession or of dental education.

Moral.—Were personal considerations a factor in the above cases? Evidence of dishonesty or degeneracy are always painful to recall and record, but unless some steps are taken to check this downward tendency and avert its consequences, dental education will be greatly impeded and the position of the profession a travesty, a burlesque, on a scientific pursuit. *International.*

THE DENTIST AND MORALS.—A recent medical writers says: "A physician who cannot assimilate morals into his being can never expect to amount to much as a man. In other words, a physician as a man is measured by the depth of his moral nature, and not by the pretensions to professional greatness with which he would veneer his real self." This is quite as true of the dentist. It is for this reason that many men seemingly great are really small. They are out of harmony with true success, because they are out of harmony with their better self. *International.*

TOBACCO ON THE TEETH.

Dr. John G. Harper.

We have proofs of the irritable effects of tobacco in snuff. The direct effect of using tobacco is the recession of the gums of all the teeth, but more especially those on the side of the mouth used mostly in chewing the tobacco. The sequel to this recession may cause the loss of one or more teeth by a diseased condition of the pulp, resulting from its being irritated by having the neck of the tooth and root exposed to thermal changes in food and in the air we breathe. Exostosis and calcification may result.

Tobacco-chewers' teeth wear away on the grinding surface rapidly, caused by the gritty substance naturally entering into the tobacco. The gums recede and are red and congested, and underneath the gum a narrow line of dark tartar is nearly always present, and particles may be found still further toward the apex of the tooth. I have given these few thoughts, hoping that others may observe and point out this evil to the tobacco user.

Clinical observation since writing the above has confirmed what is set forth therein, and I am now convinced that tobacco chewing does cause decay of the teeth, especially at the gingival portion of the teeth in the locality in which the cud is held; this is due to the formation of acids produced by the sugar or licorice used to flavor the tobacco.

I hope members of the profession will give this problem attention, so that they may give a correct answer to the question: "Does the use of tobacco injure the teeth?" *Digest.*

THE NATIONAL ASSOCIATION OF DENTAL EXAMINERS.

Notice is hereby given that the next annual meeting of the National Association of Dental Examiners will be held at Washington, D. C., commencing ten o'clock A. M., Thursday, October 13th, and continuing in session the 14th and 15th. The headquarters will be at "The Hamilton," 14th and K streets, opposite Franklin Park. The rates will be \$2 and \$2.50 per day.

Members can communicate with Dr. H. B. Noble for additional information regarding accommodations.

The poll-vote closed August 9th with 72 votes for Washington, 20 for Louisville, 17 for Chicago and 12 for Omaha, balance scattering.

C. A. Mecker, D.D.S., Sec'y, 29 Fulton St., Newark, N. J.

BLEACHING A BADLY DISCOLORED TOOTH.

About three months ago a gentleman came to me to have a tooth bleached, and the pulp had been dead for thirty-one years. It was a central incisor. It had a soft gold filling in it; it was pretty close to the pulp chamber, and the tooth was almost black. In addition to the blackness from the inside, he had been an habitual chewer of tobacco and smoker of pipes, so that not only the end of the tooth, but all other teeth touched by the pipe or tobacco were equally black. I drilled into the tooth, and after washing and filling the root, I bleached it with a twenty-five per cent. pyrozone and sealing it in the cavity, as nearly as I could, repeating this every day, having adjusted the rubber-dam each time, so that nothing could get in from the outside. At the end of twelve days I had the tooth completely bleached, so that it was whiter than its next-door neighbor. I then dried the interior of the cavity completely, filled about two-thirds of it with cement, allowed it to harden, and varnished that with gum dammar and sent the patient away for a week. On his return I put in a gold filling, covered the exposed dentine everywhere, saw the gentleman yesterday, and the color of the tooth was just as good as it was when I completed the operation.

A. W. Harlan, in Dental Review.

CAPPING PULPS.

R. B. Adair, D.D.S., Dental Society.

In my practice since our last meeting I have capped seventy-four actually exposed nerves, and have to report two failures during the year. One of these failures was where the grinding surfaces of the molars were worn down until the nerve of the left inferior molar was exposed and aching. I could not get sufficient space between the occlusion of the teeth to admit of capping, and any filling would have thrown the whole force of the jaw on that tooth. So I had to devitalize and treat in the usual way.

The other was a nodular pulp. I find that in nearly all failures the pulps are found to contain nodules.

I regard the capping and saving of nerves in teeth of more importance than any operation we are called upon to perform. Allow me to impress on your minds that it is bad practice to destroy nerves, and thereby deprive the tooth of its greatest source of nourishment, and its beautiful life-like color.

I would that you had the determination to succeed at capping nerves, as that of a prominent dentist in the State of Florida, who, hearing of my success in this line, wrote for my method, and put it into execution. Before this, his office might have been compared to a minute slaughter pen, so great was the number of nerves led to the slaughter. But now, what a change!

Another point that commends capping is, your patients who come from a distance or from the country. They come to you, their dentist, for relief. You find that there are several large cavities, and in these the nerves are exposed. Your patient can only remain a day, and you cannot successfully kill and treat the tooth in that time. How much better for you to take heed to this paper, cap these nerves, and send them on their way rejoicing. Then you can have a clear conscience of having done your duty, and not dream of abscesses from your slaughtered pulps.

The operation is so simple that any dentist who is capable of devitalizing a tooth and treating it, can cap a nerve with greater success, by far, than if he destroys it. Your patients will appreciate your efforts so much more, and they are willing to pay more to have a tooth saved alive than dead.

I feel sure that if each of you would just try the operation as I have done, and keep a record of your successes and failures, you will come up one year hence with a good report as faithful servants, and feel the consciousness of having done your duty more faithfully than you have done before.

Southern Journal.

ITEMS.

Warm water may be quickly and conveniently obtained by immersing an electric light bulb in the bracket glass.

A few drops of ammonia in the gold tray will render old scraps of gold sufficiently cohesive to work quite as well as new, provided they have not been wet.

Best results in cleaning teeth may be obtained by adding peroxide of hydrogen to levigated pumice to the consistency of cream, and applying to all of the teeth by a small twist of cotton on the end of an ordinary toothpick, and then removing with small brush wheel on engine at a high speed.

If 50 per cent. solution of peroxide of hydrogen is prescribed as a mouth wash, for several days previous, it will greatly assist in scaling off heavy deposits of hard tartar.

Many methods of separating teeth to facilitate egress to approximal cavities and lateral movement in regulating have often been offered to the profession, but the most successful one I have found was suggested to me in a moment of impatience, by cutting off a small square piece of rubber-dam and rolling up between the thumb and forefinger. Any size can be quickly made in this manner, and by touching with a drop of sandarac varnish before stretching same between the teeth, crowding on the gum may be prevented. The ends may be stretched and then clipped off in the usual manner.

Wallace Wood, Jr., D.D.S., in Weekly.

SOCIETY SAUCE.

A long paper, unless it is of unusual interest, is a bore to societies.

Society meetings are now taking place rapidly. Have something to say, say it, and be done.

The society gas-bag is beginning to inflate. No, he can inflate on the spur of the moment. No, he is always inflated.

Dr. Tellitall will be on hand. He and Dr. Knowitall will add much—discomfort—to the meeting.

One member of the Georgia Dental Society had “the floor” sixty-two times last year. What did he say? Nothing, only gaseous eructations.

A leatherhead in the chair will have a slipshod meeting.

The clinician’s task is a thankless one. He is watched and criticised. Not watched and complimented, because every on-looker thinks that he can do it better.

There is as much egotism to the square inch in the average dentist as there are square feet in Rhode Island.

Bosh, a German physician—and some think all medical lore must come from Germany—says: “Refrain from scarifying the gums of children with the idea that dentition is a pathological process.” If the lancet were used oftener in the “teething process” there would be less mortality amongst children. Some things seem to be held from the wise.

A MEETING FRIED.—At a meeting on Lookout a few years ago, one Mr. Fry was put up at the banquet to make some kind of a speech. He struck out on something about the resources of Chattanooga, and spoke for hours. We were sitting near Dr.

Kirk, of Philadelphia, who was loaded for a speech, but Fry would not let him in. Every one tired of the fellow, but he continued. One after the other left the hall, but he did not seem to notice it. On he went. The hour of midnight came, and still he talked. Finally, from sheer exhaustion, he ceased; when the few who remained throughout the ordeal silently arose and sought their couches to dream that they were being Fried into cracklings. Moral: Look out for the windies. *Dental Weekly.*

THE USE OF TEMPERED AIR AND CHLOROFORM FOR HYPERSENSITIVE CAVITIES.

All treatment must have for its object, exclusion of acids and other irritants found in the mouth.

This can be accomplished with dry air, at a temperature of 90° or 98°, after bathing with chloroform, applying it after the tooth has been isolated with the rubber-dam, before any cutting is done within the cavity of decay. The air is applied continuously, until absolute dryness of the dentine is accomplished.

This done thoroughly (and at time it is difficult) there is little suffering from sensitive dentine, and the operator has the satisfaction of feeling that he has not deprived the tooth of any of its already low vitality, he has not subjected the pulp to any undue excitement, but has left the odontoblasts in a condition to resume their functions of depositing salts in the dentinal matrix.

All this has been accomplished by simply depriving the protoplasm of water, the main factor of molecular motion.

H. C. Thompson, in Dental News.

PREPARING A RUBBER PLATE.—Dr. Hinman says: After waxing and carving, he applies chloroform to the wax with a small wad of cotton, making a very smooth surface. When this has dried it is followed with a coating of sandarac varnish. This is done both in plain or gum-section teeth. When the case is invested this varnish surface makes a very hard and smooth appearance. When the wax has been washed out, silex diluted with about two-thirds the quantity of water is applied, and almost immediately rinsed out with water. In polishing vulcanite he usually begins with very fine sandpaper, following this with pumice-stone and prepared chalk, applied with brush wheels, felt-cones and felt-wheels. He does very little file work.

AN AGE OF UNEXAMPLED MOVEMENT.

"Forward!" The sun of the twentieth century is sending his dawning rays far up into the sky of another hundred years. No century of all time was more replete with Divine presence, providential leadings, important truths, grave responsibilities, and momentous questions than is the present. All activities of human life are freighted with tremendous issues. The political, social, intellectual, scientific and religious worlds are all astir. We are assuredly living in an age of progress. This great world of thought and power is rolling on with swifter speed. Advance is being made towards purer art and more wholesome literature; progress in discovery and science, and rapid movements in new and improved inventions. Purer politics is being developed, cleaner legislation, a better form of government, and a higher type of citizenship. Christ's religion is extending on and reaching out, so that its law of love is being felt in all parts of the earth.

Yet in this age (marked with such wonderful growth, both in material and spiritual things), there is still heard on all sides the command, "Forward!" It comes not only to the Church, not only to the world of thought and power, but to the individual. He who creates the thought, produces the power, controls the forces, and makes all advancement possible. I make special appeal to the young people to move on. "Forward, march!" Progress should, of course, be the aim of young or old. But why so many addresses to the youth of our land, the young people of our churches?

Because the needs of the times demand it. The various activities of life call for the brain, muscle, nerve, and virtue of our young people as never before. "The glory of young men is their strength," said a wise man of old. "I write unto you because ye are strong," says the beloved disciple. Titus exhorts young women to be wise; and Paul, the faithful fighter for the faith, says, "Let no man despise thy youth." Strength of mind, heart, life, character, soul, are demanded of the young men and young women of to-day. And for some useful, definite purpose. Shakespeare says, "The world is a stage on which each must play his part." Better yet, Christ says it is a vineyard in which every one is invited to work. *Success.*

A METHOD OF CROWNING BROKEN-DOWN TEETH.

C. J. Hand, D.D.S., Romeo, Mich.

In crowning badly broken-down teeth, or where devitalizing the pulp is not expedient, or is objected to by the patient, as in short laterals or denuded teeth, I have found the following a good plan: After trimming, so that band can be accurately fitted, make a band of thin platinum, to cover all exposed portions of tooth, and solder with pure gold. (Of course, it is supposed that the labial wall has been beveled as much as possible, to permit the facing being brought in line with the adjoining teeth.) Instead of using a thin facing, secure a Bonwill crown, one that will nicely fit the space, and grind out the lingual portion, leaving the sides intact. Grind until the tooth can be placed over the platinum cap in proper position. It can now be waxed to the cap, invested, and body added to restore form, or better still, a little body mixed thin and placed on the porcelain and platinum cap, gradually raising the heat until fused. This method not only saves time, but prevents the investment absorbing the water in body and causing a porous bake. The crown is much better than a facing, as it prevents the difference in color at sides, which it is almost impossible to prevent when body is added to a facing. If care has been used, the crown will go to place accurately and present a very natural appearance. *Ohio Dental Journal.*

BLEACHING TEETH.

Some time ago we had two teeth to bleach which had been stained by dead pulps and decomposed blood and iodoform. After all decay had been removed, they were washed with a pyrozone solution of 3 per cent.; then powdered alum and Labarraque's solution of chlorinated soda was introduced for about five minutes. This removed some of the coloring matter. The cavities were then washed with borax water 10 per cent. We then used a saturated solution of sodium peroxide for about ten minutes, and the cavity was then washed with 10 per cent. sulphuric acid. This was neutralized with a 2 per cent. solution of carbonate of sodium. The teeth were still somewhat black, and we gave it up for the day. Next day 25 per cent. pyrozone was used, but the teeth were still discolored. We then used the alum dry in the tooth, adding the solution of chlorinated soda for about ten minutes, and the bleaching was perfect. The cavities were then

washed with a solution of baborate of soda, then dried, and the interior painted with a solution of white paraffine dissolved in ether.

A thin oxychloride was packed into each cavity and allowed to harden. This was covered with oxyphosphate of zinc, and the teeth were left for a week. They were then filled with gold, and the color is perfect, as they both look as natural as the adjacent teeth. All of the exposed dentine was covered with gold, so that no percolation from the outside is possible. Did we take too much trouble for the result? *Editorial in Review.*

THE GREATEST MINING SHAFT.

The newest wonder in American engineering has just been inaugurated at Houghton Mich., viz., the Red Jacket shaft of the Calumet and Hecla—the greatest mining shaft in the entire world. It is 4,900 feet deep, and, compared with it, the deep silver mines of the Comstock lode in Nevada, or the wonderful mines of Austria, worked for many centuries past, are but shallow pits. There are six compartments, each equal in size to an ordinary mining shaft, four of these being used for hoisting rock and lowering timber, one is used for the ladderways, and the sixth and last compartment carries the wires and pipes for telephones, light, power, water and compressed air.

The underground workings of the shaft are laid out with mathematical accuracy, the undeviating course of the copper bearing lode allowing work to be planned thousands of feet ahead of the mineral picks. The great pumps which free the mine of water are operated interchangeably by compressed air and electricity.

SULPHURIC ACID IN MIXING AMALGAM.—While attending the Blue Grass Dental Association, I saw a demonstration of the use of sulphuric acid in mixing amalgam. I have tried it a number of times and have secured good results. Take a five per cent. solution of the acid and pour on the amalgam for the filling: wash it thoroughly, then add the mercury, of which I think it requires less, wash it well and squeeze out the excess of mercury. The results will be pleasing. *H. A. Smith, in Dental Weekly.*

[Unless this acid is thoroughly washed out it is certainly injurious. Better use soda water or alcohol, and thoroughly dry. —ED. BRIEF.]

PRACTICAL ITEMS.

Coating the face of a Mellotte metal die with vaseline will prevent the counter-die from fusing with the die.

A vaseline coating on the glass stoppers and the inside of the necks of varnish or preparation bottles, will admit of the bottles being easily opened, and will keep them free from incrustations of varnish, etc.

In smoothing the surface of wax plates before investing, by the aid of a flame from a Bunsen burner or alcohol lamp, use a chip-blower to direct the flame instead of a blowpipe—it is easier to control.

An easy method of removing gutta-percha points from root-canals is to roughen the point of an Evans root-canal drier, heat the bulb and pass the point slowly into the canal. Cool the bulb with a wet sponge, and on removing the point the gutta-percha will come with it.

To treat the root-canals of posterior teeth when the walls are broken down so badly that the rubber-dam cannot be adjusted, proceed as follows: Prepare the tooth as for a permanent filling. Fill the pulp chamber with S. S. White dressing seal, allowing the filling to project from the pulp chamber as far as occlusion will permit. Build a wall of amalgam around this, and at a subsequent sitting adjust the rubber-dam, remove the seal and proceed with treatment.

To mend a plate temporarily where a tooth or a section has been broken off leaving the pins in the rubber, wash the exposed surfaces thoroughly with soap and water and then with chloroform. After drying thoroughly, coat the surfaces with a mixture of equal parts of gutta-percha and resin, dissolved in chloroform, lay a thin piece of gutta-percha over the broken surface of the plate, heat over a spirit lamp and press the tooth or section to place.

Indiana Journal.

“During the evening of September 3d. over one hundred of the cabinets manufactured by the Ransom & Randolph Co., Toledo, Ohio, were destroyed by fire. The furniture made by this company is of such superior quality, of such beauty and convenience that many dentists will regret that it could not be put to better use than as food for flames.”

DIFFICULT LOWER DENTURES.

J. D. Patterson, D.D.S., Kansas City, Mo.

In the work of plate-making there are broad principles to be observed. First, the plate must rest with even pressure upon the mucous membrane it covers, and if such surfaces present areas of soft and hard resistance, then the plate in relation to those tissues must exert a compensating pressure. The soft tissue must give until an even plane of resistance is established, without which the plate will not adhere, but will rock and will unduly press and irritate at points.

The second important feature is that of properly placing the teeth to secure natural and anatomical articulation. These two broad principles observed, as well as many other minor and less difficult problems solved, we may generally expect the best results.

To this statement there are exceptions—the edentulous lower jaw, where the once prominent ridge has been resorbed through disease, or natural senile recession, or absence of plates, or by the wearing of ill-fitting on non-aseptic plates. Here we are confronted with a situation in which, although we observe all basal principles in plate construction and every minor point usually taught, we find the denture so unstable and so easily movable that it is anything but a pride to the operator or a comfort to the wearer.

A variety of contrivances to obviate this difficulty, spiral springs and a variety of suction chambers or channels, patented and unpatented, have been devised to meet the demand and delude the hopeful, as they certainly have the writer in past years. The springs, in my opinion, are hardly worth considering; they are ineffective and also intolerable because of the continual pressure and difficulty in cleansing. The numerous little suction points or deeper channels are sure to produce irritation at last, accompanied by greater absorption. On account of such irritation they are usually inapplicable because of the surface on which the plate must rest being so narrow, on account of the encroachment of muscular tissue, that they cannot be placed.

A solution of the difficulty is to supply, as well as a perfectly-fitting plate, a heavy one, and the object of this paper is to recommend to you the very heaviest material made for that purpose, namely, Watts' "Metal." The use of heavy plates to utilize the force of gravity in the retention of lower dentures is nothing new,

but in practice—save by employing weighted rubber—it is very little used. In conversation with the managers of dental depots I find that a fusible alloy is used in probably less than 1 per cent. of where my experience proves it to be indicated.

The chief objection which is urged against the use of this material is that the muscles of the lower jaw soon tire of the superimposed weight. This, however, has not been my experience, if the plate did not weigh over fifty dwt. The ordinary plate made of Watts' metal weighs about thirty-four dwt.; the same of Weston's metal weighs twenty-six dwt; of weighted rubber, twenty dwt., and of ordinary rubber, ten dwt. I found that the additional weight of Watts' metal gave a decided advantage in the retention of the plate, and experiments all went to show that a plate weighing between thirty-five and forty dwt. never tires the jaw, but affords a comfort and satisfaction not attained by materials of less weight.

Another objection, that the metal will not retain its color and will produce a disagreeable taste, is not observed in Watts' metal (the formula is not known precisely, but is principally of tin, lead and bismuth, as are all alloys of this class). In the dentures I have made of Watts' metal there has been no oxidation after fifteen years' use, and other dentists have confirmed this.

The most frequent objection is the difficulty in obtaining a good result, the claim being that the metal will not flow in every point of the mold. I have gone through this experience, but now find no difficulty in securing a perfect cast. I use for model and investment the usual plaster, sand and asbestos of soldering investment, with the addition of a small amount of whiting to render the surface smooth, following the directions accompanying the metal, with the addition of pure beeswax as a flux. Before I used the beeswax as a flux failures were common, and I therefore give you this plan, which has not been before recommended, and am confident it will insure good results. The flux must not be used indiscriminately or unevenly, but as follows: After carefully removing every particle of base plate, heat the case and apply pure melted beeswax with a hot pencil brush wherever there is doubt of the alloy following; just a smear of the wax will do the work, too much of a coating will result in failure.

When this is done and the case is clamped, joints luted, heated and dried until moisture will not condense on a mirror held before the pouring gates, the case is ready for pouring. Do not pour while the flask is very hot, but allow it to partially cool;

do not overheat the metal, but pour rapidly just so soon as thoroughly melted.

I shall be pleased to give any practical instruction to those who have had difficulty in doing this work, and I can cordially recommend this style of denture because it is strong, stays in place, does not tarnish, is easily constructed and reasonable in cost.

I quite agree that reinforced gold plates with rubber attachment will give the necessary weight, and a more acceptable and handsomer result; but most patients wearing full lower dentures are unable to pay the fees necessary for gold.

DISCUSSION.

Dr. W. M. Bartlett: This is a very good class of work for flat ridges, but it is always liable to have bubbles. I cannot approve of any work not easily repaired, and this cannot be; the only way we can repair it is by the use of easy-flowing solders or by a vulcanized joint, and all such work tarnishes. I much prefer a gold base or a continuous-gum plate.

Dr. J. H. Kennerly: During the last few years I have made many of these plates and they give entire satisfaction. If care is taken in polishing the plate in the first place it may be worn for years without tarnishing, and is easily kept bright.

Dr. William Conrad: I make the repairs on these plates with rubber, and it is just as easy to do as with rubber plates. The only objection which I have to the use of any heavy plate is that there seems to be an enormous amount of resorption of bone process and considerable softening of the tissues themselves.

Dr. H. Prinz: Some time ago I made a number of analyses of the various metals that are used for lower plates with the following results: Watts' and Weston's metals are alloys largely composed of tin and silver, to which a small amount of bismuth is added to reduce the melting point. The saline fluids in the mouth when acting on the plates may form chloride of tin, as tin is very easily attacked by chlorine. This chloride of tin is a strong antiseptic, which will exert its good influence upon the mucous linings. No toxic salts are formed for this reason, and because of its weight and adaptation a cast plate is preferable for lower dentures. Furthermore, it is easily kept clean by the patient. Broken plates are repaired by using the same metal as solder with the soldering-iron and employing a solution of chloride of zinc as a flux. For strengthening partial lower dentures a piece of German silver or tinner's steel wire should be

used. Have the cast as dry as possible and nearly the same temperature as the molten metal.

Dr. Patterson, closing the discussion: I know that this method has been discarded, but I think unwisely, as it has great possibilities in these particular cases. Some require weight to hold the plate in place so that the patient can properly masticate food. These plates can be easily repaired by a piece of the metal with a blow-pipe and a flux of beeswax; the latter article should be pure and have no paraffine in it. Tissues do very well under these plates, though the absorption has extended to the bone proper before plate is put in.

Digest.

FILLING A TOOTH.

Dr. William H. Carpenter, Providence.

In shaping cavities much depends upon the material at hand. I do not believe in sacrificing tooth-structure to prevent margins from touching, for this can be prevented by obtaining a little extra space and then bulging the filling sufficiently to hold the margins away from each other. I believe that no flat surfaces should exist, but in all cases the surfaces should represent segments of two circles. The cavity should contain no grooves or pits if it is possible to prevent them, and it is generally. The matrix should be kept in place until the last piece of gold has been introduced. Presuming that the teeth in question are suitable for restoration by filling, I use for that restoration gold contour work with the aid of matrix, in every instance. I believe a good operator can get the best results with soft gold cylinders at the cervical wall and two-thirds the way up toward the grinding surface, continuing toward the top with semi-cohesive and finishing with cohesive gold, or, where the surface receives too much attrition, with gold and platinum (rolled), No. 60. In very poor tooth-structure I sometimes use at the cervical wall a few pieces of gold and tin, No. 3, folded together and lightly rolled into cylinders. The matrix must be used. It simplifies, and produces the only perfect filling. The matrix may be of any kind the operator prefers, provided it is of steel. I use cold rolled steel very thin, and shape and fit one to suit each case, holding it with either gutta-percha, cement, separator, or whatever I think best suited to gain the end desired—viz., a nice gold contour needing but little finishing on the approximal surface, most of which can be effected with the burnisher.

Digest.

PRACTICAL HINTS ON PROSTHETICS.

Plaster will set more readily if tepid, not hot, water is used. Cold water will retard setting.

Conical shaped glasses or porcelain bowls are nicer to mix in, and the plaster readily comes away if a little water be added to the plaster after it is set.

To properly mix plaster, put water in first, gradually adding the plaster; this prevents air bubbles.

In mixing for impressions, if a little coloring matter, such as powdered pigment be used, the line of demarkation between the impression and model will be clearly defined.

In taking plaster impressions of partial cases, remove before the plaster has set very hard. If pieces break away save them, place them back where they came from, wax them in place, and the impression will be accurate. After pouring some plaster into the impression shake it down, and then with a slinging motion of the hand throw out all the plaster that is soft enough to leave the impression. Then fill up the impression with remaining plaster, shaking it down well. The result will be a model with a dense hard surface.

To cut an old model easily—soak in water a few minutes, when it will be easily trimmed.

To take impressions where the teeth are irregular—fill spaces between irregular teeth on the ridge with plaster or modeling compound, varnish and oil the cores thus made, take impression over all, remove impression, then remove cores, place in the impression, pour the model and you have it perfect.

To mend plaster casts so that heat may afterward be used without affecting the mend, use oxyphosphate.

Impression material from which a die may be cast straight:

Plaster I quart.

Pumice stone, powdered I pint.

Chalk I pint.

Mix and use same as plaster.

To prevent plaster sticking to the teeth when taking impression, slightly oil them.

To make a warped rubber plate fit again: Take a new impression of the mouth, from which make a model. Warm the plate until quite pliable. Press down on model and dip in cold water.

Ned, in Weekly.

HINTS.

By a Lazy Man.

1. I could write six pages instead of six lines on any subject. But I'm too tired, and I never read or write anything that will spoil a yawn.

2. Sharpened chisels dipped in oil trim vulcanite as easy as cutting soft chocolate.

3. If you pack vulcanite warm and wet, it packs clean and easily.

4. Save your eyes—and your patients—by wearing glasses when you need them. Go to an oculist—no one else—and find out if you need them. No man knows the exact condition of his own eyes any more than of his own teeth.

5. Nothing better to soften the hands and cleanse nails and fingers quickly than hartshorn ammonia, twenty or thirty drops to a basin of water. Use to clean any blessed thing about your office. Cheap.

6. If you are afraid or too prejudiced to test Iever's Pheno-Banum ("Quick Cure"), you should have died before now.

7. If you ever put an all-gold crown in a conspicuous place you err in taste, to say the least. Wonder some one doesn't get his portrait, or his name and address engraven. An all-gold crown conspicuous is a sign that the wearer is vain and lacking in nice feeling, and that the maker is about equal. *Dominion.*

ARISTO-PARAFFIN WAX FOR ROOT-CANALS.

Mix the aristol and paraffin by application of slight heat and by means of a spatula till the mass assumes a dirty straw color. This mixture will not deteriorate with age, and can be kept in a glass or in a pasteboard box. Paraffin wax as found in commerce is impure hydrocarbon, but it will not volatilize unless raised to a high temperature.

After the dam has been applied and the canal has been sterilized and prepared as usual, it should be desiccated thoroughly by use of chloroform or alcohol with hot-air syringe, or by use of a root-canal drier. When this has been accomplished, roll a cone of aristo-paraffin and place in the canal, and with a heated root-drier or other pointed instrument touch the wax, when it will fill the canal by capillary attraction.

When the canal is filled, to all appearances, the material can be forced up through the apical foramen by means of a round-head burnisher and pledget of cotton or bibulous paper, or by twisting cotton around the sharp point of a plugger, when by the slight irritation evinced by the patient for the instant it will be known that the canal is filled. Experiments with this preparation on extracted teeth demonstrate through what surprisingly minute foramina it can be forced.

The advantage of using aristo-paraffin, where the foramen is large, is that, if it is forced through the foramen, it will not produce sufficient irritation to cause or continue an abscess, but be absorbed by the tissues, which advantage can hardly be claimed for any other filling of the same value in other respects. When the canal is thus filled the bottom of the cavity should be covered with cement, and the filling completed as conditions indicate.

Between sixty and seventy cases of abscessed roots have been treated and filled in this manner, from one to three years' standing, and there has been but a single case of recurrence of apical tumor, which was caused by an impacted third molar.

H. B. Hickman, in Cosmos.

HARDENED AND WASHABLE PLASTER OF PARIS.—For the hardening of gypsum, a firm in Heidelberg has taken out a German patent on a process which apparently surpasses all those in existence, and furnishes very satisfactory results. Either burnt gypsum is prepared and mixed with the liquid named below, or else the finished articles of hot gypsum, or of mixtures of gypsum and other bodies are impregnated by painting with a fluid. It consists of a solution of ammonium triborate in water. For this purpose, boracic acid is dissolved in warm water and a certain amount of ammonia is added, whereby a substance really soluble in water and deviating much in its properties from known compounds results. The saturation of the gypsum, or the painting of the plaster articles is carried out into the cold. The objects are subsequently rinsed and dried. The surface becomes very hard after two days and insoluble in water, while the induration in the interior advances more slowly. By means of the fluid described, gypsum floors can be hardened and rendered more durable and impervious to the influences of the weather. Saturating with ammonium borate is said to be especially useful on exterior walls of buildings, etc. Experiments have proved an antiseptic action of the liquid.

Scientific American.

INCAPACITY AND VACILLATION.

Even brains are second in importance to will. The vacillating man is always pushed aside in the race of life. It is only the weak who halt before adverse circumstances and obstacles. What we long for and strive for with all our strength, we usually approximate if we do not fully reach. Hunger breaks through stone walls; stern necessity will find a way or make one.

There is about as much chance of idleness and incapacity winning real success, or a high position in life, as there would be of producing a *Paradise Lost* by shaking up promiscuously the separate words of Webster's Dictionary, and letting them fall at random on the floor. Fortune smiles on those who roll up their sleeves and put their shoulders to the wheel; on men who are not afraid of dreary, dry, irksome drudgery, men of nerve and grit who do not turn aside for dirt and detail.

The youth should be taught that "he alone is great who by a life heroic, conquers fate;" that "diligence is the mother of good luck;" that, nine times out of ten, what we call luck or fate is but a mere bugbear of the indolent, the languid, the purposeless, the careless, the indifferent; that the man who fails, as a rule, does not see or seize his opportunity.

Opportunity is coy, is swift, is gone, before the slow, the unobservant, the indolent, or the careless can seize her:

"In idle wishes fools supinely stay."

It is astonishing what men who have come to their senses late in life have accomplished by a sudden, vigorous resolution.

Success.

WHAT WILL CAN ACCOMPLISH.

History is full of examples of men and women who have redeemed themselves from disgrace, poverty and misfortune by the firm resolution of an iron will. The consciousness of being looked on as inferior, as incapable of accomplishing what others accomplish; the sensitiveness at being considered a dunce in school, has stung many a youth into a determination which has elevated him far above those who laughed at him, as in the case of Newton, of Adam Clark, of Sheridan, Wellington, Goldsmith, Dr. Chalmers, Curran, Disraeli, and hundreds of others. "Whatever you wish, that you are; for such is the force of the human will, joined to the Divine, that whatever we wish to be, seriously

and with a true intention, that we become." While this is not strictly true, yet there is much truth in it.

It is men like Mirabeau, who "trample on impossibilities;" like Napoleon, who do not wait for opportunities, but make them; like Grant, who has only "unconditional surrender" for the enemy, who change the front of the world. "We have but what we make, and every good is locked by nature in a granite hand, sheer labor must unclench."

A man who can resolve vigorously on a course of action, and turns neither to the right nor the left, though a paradise tempt him, who keeps his eye on the goal, whatever distract him, is sure of success. Given a knowledge of one's will-power, it would be comparatively easy to predict whether he would make of life a success or a failure. Men like Sir James Mackintosh, Coleridge, La Harpe, and many others who have dazzled the world, but who never accomplished a tithe of what they attempted; who were always raising expectations that they were about to perform wonderful deeds, but who accomplish nothing worthy of their abilities, have been deficient in will-power. One talent with a will behind it will accomplish more than ten without it. The great linguist of Bologna mastered a hundred languages by taking them singly, as the lion fought the bulls.

Success.

LIGHT AND ECONOMICAL BRIDGE-WORK.

To lessen the weight and to economize in bridge-work are two most desirable considerations.

We believe Dr. Thomas Crenshaw, of Atlanta, has solved both problems. In all suspended gold crowns, after reinforcing, select a porcelain tooth corresponding in size to the class desired. Wrap this with thin sheet platinum, first having coated the platinum inside and out with the proper flux. Place small bits of 22-k. solder in bottom of gold crown, then place the platinum wrapped tooth in the crown with solder liberally arranged between tooth and crown. Invest and direct the flame at the bottom of the investment. This attracts the solder to the cutting edge or crown surface, insuring perfect contact at all points. We have had the pleasure of seeing this practically demonstrated and are impressed with its two great desideratums—economy in gold and a minimum of weight, without impairing in the least the strength of the bridge.

J. A. C., in Dental Weekly.

OUR DENTAL SOCIETIES.

Dr. James Truman.

The organization of societies in dentistry in the United States is but little over half a century old. The condition of things in the dental profession in the "thirties" can scarcely be conceived by the liberal minds of the present. It was a period of isolation. The hand of every man was against his fellow practitioner. The walls of prejudice were erected everywhere. Doors were bolted and barred against intrusion. Lips were sealed, lest they might disclose important methods of practice. Nowhere throughout this progressive land in dentistry was there any light on the mediæval darkness. It, however, proved to be the period before the dawn. From behind all the cloud and shadow there was heard a voice proclaiming in no uncertain tones the old cry "To your tents, O Israel," but it fell upon deaf ears. It was the voice of Horace H. Hayden. With true prophetic inspiration he ceased not to demand that the dentists of the time should come forth from their isolation, and with something of the spirit of the old crusaders unite and arm for the approaching conflict. The day came when Horace H. Hayden conquered, and in New York the first society was born into life, but died in birth. Again we find this courageous pioneer at the head of the American Society of Dental Surgeons, and then for the first time on this continent began the true life of associative dental effort. We rear monuments to our great men and women, but the only monument yet reared to Horace H. Hayden lies in the historical record of his deeds. Upon his neglected tomb I would lay this chaplet, that the dental profession may never forget what it owes to this one man who labored that we to-day may live.

TO MAKE ARTIFICIAL TEETH LOOK MORE NATURAL.—The artificial teeth of to-day are unnatural in that they are baked to yield a glistening appearance. A diminution of this high glossiness is what we should hope to attain. By dipping artificial teeth, prior to setting, into hydrofluoric acid, the surfaces become more life-like. Select the color with reference to the complexion and age of the patient, and never permit the latter to lead you from the path of professional knowledge; rather choose teeth somewhat darker than you first conclude. The teeth always appear lighter when placed in the mouth than they do when on the wax base-plate.

British Journal Dental Science.

THE DENTIST'S POSTURE AT THE OPERATING CHAIR.

Eliza M. Mosher, M.D., Ann Harbor.

The dentist, almost more than any other workman, is obliged to occupy a position over his patient which is far from the normal position of the body, that in which it can do its best work. In making this study, it has been very interesting to me to see the influence first on the spine. It is his good fortune that he is obliged to change from one foot to another, but he puts more weight on the left foot. It is his right hand which is steady, and he must turn his face to the patient. Perhaps you do not know what it does to the back and various parts of the body. From a study of it upon a good many individuals, I find that the spine becomes permanently twisted outward and to the left, the ribs project backward on the right and recede on the left. At the upper part the twist continues at the top, so we have a rotation of the spine upon its own axis. Then you find that he has, in addition to this, a low left shoulder, which makes the two sides not symmetrical. The anterior wall of the body is shortened very materially. The space from the pelvis to the top of the chest is shortened and flattened, flattened on the right and pushed out on the left. Now, in that position the harmful effect is the influence upon the lungs, especially upon the young man who is not extra strong. The indoor life and flattening of chest is, of course, a great wrong. Using muscles on one side and which are not developed on the other, puts the body at a disadvantage.

Ohio Journal.

COTTON POLISHING CONES.—I have often been annoyed when finishing a plate with plain teeth to get anything that would polish between the teeth, but have found cotton-batting polishing cones to be just the thing. They can be made as small as required, cost nothing, cut very rapidly, as they hold the pumice or other abrasive material in the fibers, and can be made to hand in a moment. Take a bit of cotton batting, the size required for the cone, hold it between the ends of the two forefingers and thumb against the point of screw or cone mandrel when running, and it will be formed in an instant; then wet with polishing mixture and cut off the small end with scissors.

D. V. Beacock, in Ohio Journal.

A VULCANIZED FINISH.

Some things are never old. Here is the way Dr. Steele makes a rubber-plate with a vulcanized finish:

A nice way of preparing plates to come from the flask clean and smooth, and ready for pumice and final polishing, is to be sure and get a perfect, smooth cast. Make your model plate of paraffine and wax. After the teeth are mounted correctly, shape the gums and plate just as you would have it for the mouth; then, after trying it in the mouth to make sure it is all right, place it back on the model and flask as usual. When the flask is opened, place both parts in boiling water, and with an atomizer tube go over all the joints and pins, thoroughly washing out all the wax. Take the flasks out of the boiling water, and immediately coat both the model and the lingual surface of the plate with a varnish made from pure liquid silicic acid, to which has been added enough fine, pure powdered tin to make it give a good metallic coating. Then set the flasks in the air a few minutes until the varnish is set. Now lightly coat both varnished surfaces with soap to prevent the metal coating from adhering to the vulcanized plate. On opening your flask the plate will come out clean and smooth, requiring but little work to finish. *Dental Weekly.*

USE OF THE DISK.

W. A. Hockard, D.D.S., Indianapolis.

The disk-holder or mandrel may be used more advantageously if the head or screw that holds the disk be dressed down a little. Many times a very small disk is called for in finishing small gold fillings at the "gum line" or on the labial surfaces of the central incisors. A large mandrel head mars the surface of the filling if it touches it, and it often does when small disks are used. In polishing gold fillings in molars and bicuspidis when leather, chamois, moose hide or soft rubber is used to carry the polishing powder, the large mandrel head makes it hard to polish in the fissures. By putting the mandrel in your hand-piece and turning it against a file or stone, it takes but a few minutes to reduce the size of the head to one-fourth the original size. I only use a large headed mandrel when using large disks. "The disk is a very painful thing, and I use mostly strips and work them back and forth slowly." Do you? Oh!—I don't; I use disks

almost exclusively, always when it is possible. To obviate the pain, which is caused by nothing else but the heat, I have my assistant throw a continuous blast of cold air on the tooth. The air alone, of course, would hurt as much as the ordinary manner of disking does, but properly applied at the same time, neither it nor the disking gives any pain. To get cold air you can use a continuous flow Richmond spray, a blow-pipe bellows, or a compressed air apparatus such as is used by the nose and throat specialists. Some of the modern buildings in large cities furnish compressed air, which makes it very convenient for dental work.

In putting on the final polish I use a rouge-coated paper disk. This polishes a filling smoother and better than anything that has yet been brought to my notice.

Ind. Dental Journal.

TWELVE SUCCESS MAXIMS.—The President of the London Chamber of Commerce gives twelve maxims for success, which he has tried through five years of business experience:

1. Have a definite aim.
2. Go straight for it.
3. Master all details.
4. Always know more than you are expected to know.
5. Remember that difficulties are only made to overcome.
6. Treat failures as stepping-stones to further effort.
7. Never put your hand out farther than you can draw it back.
8. At times be bold; always, prudent.
9. The minority often beats the majority in the end.
10. Make good use of other men's brains.
11. Listen well; answer cautiously; decide promptly.
- 12 Preserve, by all means in your power, "a sound mind in a sound body."

EASTERN IOWA DENTAL SOCIETY.—The tenth annual meeting of the Eastern Iowa Dental Society, will be held in Iowa City, Iowa, November 16th, 1898. An interesting programme is being prepared. All members of the profession are invited to attend.

I. S. Mahan, Sec., La Porte City, Iowa.

PRACTICAL POINTS.

By Mrs. J. M. Walker, Bay St. Louis, Mississippi.

To Open Bite Permanently—"Cap Fillings."—Where, for any reason, it is desirable to open the bite permanently, to avoid crowning molars with living pulps, adjust "cap fillings" as follows: Grind occlusal surfaces nearly to a plane, take impression, and strike up plate of nearly pure gold, about 32-gauge, to which solder a second plate to thicken it. Drill pin holes in the centers of the four sides of the molar plane surface, thereby avoiding the cornuæ of the pulp. Drill corresponding holes in the reinforced gold plate, to which solder platinum pins. Unite in the plate properly articulated cusps. Set with cement. By this method the approximal surfaces of the teeth are not marred, and the relation of the gums to the necks of the teeth not undisturbed.

M. F. Finley, Am. Den. Ass'n, 1897.

Abscess without Fistulous Opening.—To make a fistula, dip a serrated plugger point in a 95 per cent. carbolic acid solution. Dry gum over apex, and touch the instrument to the spot where fistula is desired, forming an eschar which can be removed with serrations of plugger point. Dip again in the acid and repeat until abscess cavity at apex of root is reached. With large round bur cut away ragged edges of process and tooth, wash out cavity with boiled water two parts, and antiseptic mouth-wash one part. Fill, and polish end of root; treat canal same as in case of chronic abscess. *H. H. Sullivan, Dental Digest.*

Root-canal Treatment.—Having prepared the canal by the removal of all septic matter, pack with pellets of cotton, dipped in water, and then into finely pulverized crystals of nitrate of silver. Close with temporary stopping and dismiss for a week or two, when the nitrate of silver will have penetrated the dentine and rendered the root thoroughly aseptic.

L. G. Noll, Miss. Den. Ass'n, 1898.

The Setting of Cement.—The addition of a very little finely powdered borax to the powder of a cement will change it from a rapidly-setting to a slow-setting one. On the other hand, a drop of hydrochloric acid will make the cement set rapidly.

Vierteljahrschrift.

Restoration of Broken-down Molars with Aluminum Cap.

—Secure good fit and articulation of swaged aluminum cap. Make proper undercuts in dentine, fill cap with cement, and press to place. Worthy a place in crown-work when something less expensive than gold is desirable. Avoid contact with amalgam, as the mercury will unite with the aluminum, causing it to crumble.

A. E. Preston, Dental Cosmos.

Pyorrhea Alveolaris in Young Children.—It is not an uncommon thing to find pyorrhea alveolaris in a very young child, because young children are prone to nephritic troubles. The presence of albumen in the urine of young children is very common. Pyorrhea in children is more common than our literature would show.

M. L. Rhein, Dental Cosmos.

Removing Teeth from Old Rubber Plate.—Boil the plate for a few moments. The rubber will be found yielding and may be sprung from the teeth with a pair of pliers, avoiding the unpleasant odors arising from holding over gas-jet.

Den. Digest.

Disinfection of Instruments.—I have been using a 2 per cent. solution formalin as an antiseptic for my instruments for the last three months, and like it very much. It does not blacken or corrode them.

A. S. Eschleman, Dental Cosmos.

Root-canal Treatment.—Inject 1-1000 bichlorid sol. through root until canal and abscess seem clean. Wrap a little cotton on a fine broach, dip in 40 per cent. sol. sulphuric acid and work up and down canal a few times, followed by a saturated bicarbonate of soda solution. Then bichloride again until no stain on cotton appears. Make solution chloride of zinc, 40 grains to 1 oz. water and inject in abscess sac. Leaving root moist, mix oxychlor. zinc and bichlor. m. sol. to consistency of cream and pump in canal. When crystallized, fill the cavity.

V. M. Murier, Dom. Den. Jour.

A Hint on Extracting.—After extracting abscessed teeth, always syringe the sockets with hot water and an antiseptic, especially in the lower jaw, where pus may remain in a socket after extraction.

Dom. Den. Jour.

Pyorrhea Alveolaris.—I have had very good results from the electrolytic effect of pure silver, using the ordinary cataphoric apparatus and a spatula of pure silver, thus obtaining the oxychloride of silver. I think this is a therapeutic field worth investigating.

M. L. Rhein, Dental Cosmos.

Investing Compound.—Teague's Impression Compound beats the world for investments. It will protect the porcelains and stand all the heat you may apply, without cracking or shrinking. *E. G. Quatchbaum, Am. Den. Weekly.*

Fitting Logan Crowns.—Grind root below level of gum all around; enlarge canal to receive Logan pin; insert temporary pin long enough to reach to occlusal edges of adjoining teeth; take plaster impression, withdrawing pin with plaster. Run Mellotte's metal model, withdraw pin; grind the Logan crown to fit this metal model. *C. J. Sowle, Dental Review.*

Die and Counter-Die of Mellotte's Metal.—To prevent adhesion paint the surface of the metal die with a thin coat of "whiting" and water; dry with a blast from the blow-pipe, leaving an even coat of chalk upon the die. The counter may be poured reasonably hot; the parts separate readily.

A. H. Davis, Atlanta Den. Jour.

Root-canal Filling.—My method is to fill with common lime mixed with water to a pasty condition, with enough carbolic acid and iodoform well mixed with it to give antiseptic and disinfecting qualities.

W. D. Snyder, Ohio Den. Jour.

To Prevent Irritation of the Gum by Clamps, etc—The transparent oiled silk of the drug stores is a very serviceable material to put between the gum and irritating regulating fixtures, rubber-dam clamps, etc. *B. H. Teague, Am. Den. Weekly.*

Electro-Sterilization of Root-canals; Chloride of Zinc.—Seal the apex, fill canal with pyrozone, add a small amount of chloride of sodium, place zinc wire electrode in the moistened canal, turn on current.

M. L. Rhein, Ohio Den. Jour.

A Standard Antiseptic.—Listerine can be used with equal safety, internally and externally. Its uniformity of composition, efficiency and safety in use, have rendered it a necessary part of the equipment of every household. *Med. Brief.*

The First Permanent Molars.—Point out to parents that as the child has *twenty* fingers and toes, so also it has *twenty* deciduous teeth. They will be less likely, when the first permanent molars appear, to mistake them for deciduous teeth.

J. R. Lowe, Western Den. Jour.

Alloy and Phosphate Fillings.—Mix dry phosphate powder with the fine filings of an alloy. Use in connection with the liquid of the phosphate powder. After two or three days polish with a smooth stone in the engine. Recommended especially for teeth of children.

R. Ottolengui, Dental Headlight.

Antiseptic Mouth Wash.—Sanitol is an effective antiseptic and deodorant, both as a mouth wash and for cleansing the teeth. It is especially efficient in hardening the gums, when they bleed readily when brushing the teeth. *Dr. C. Lindsley.*

Pulp Devitalization in Deciduous Teeth.—One or two applications of aqua ammonia is sufficient in most cases to devitalize an exposed deciduous pulp. Apply on a pledget of cotton in the cavity. *Geo. N. Wasser, Ohio Den. Jour.*

Root-canal Filling for Deciduous Teeth.—Make a paste of iodoform in glycerol, of such consistency as can be readily applied on a probe. Fill pulp chamber with temporary stopping, and cavity according to conditions.

Geo. N. Wasser, Ohio Den. Jour.

Pericementitis.—In all cases of acute pericementitis, I have found cataphoresis, with the use of the copper electrode, to give immediate relief, leading to a speedy cure; also in cases of chronic soreness of teeth filled to the apex. Use a point of copper similar to a root dryer. Place in pulp cavity a saline solution, insert point attached to the positive pole, using as strong a current as the patient will bear with comfort, for about five minutes. A flat piece of copper shaped like a trowel, soldered to an electrode stump, applied to cotton saturated with a salt solution laid on the gum will usually give satisfactory results.

S. T. Kirk, Indiana Den. Jour.

Action of Arsenic on Soft Tissues—Antidote.—In the tincture of iodine we have an antidote of which the action is so certain and prompt in arresting inflammation and ulceration, caused by the accidental contact of arsenic trioxid with the gums and cheek, that I regard it almost as a specific. If those who use arsenic estimate at their full value the terrible ravages that may be caused by it, and know how easily they may be arrested, it is inexcusable if not criminal, to permit a case to go on to necrosis of the bony structure.

A. N. Dick, Pacific Med. Den. Gazette.

To Improve Appearance of Artificial Teeth.—To remove the unnatural high glossiness of porcelain teeth, dip into hydrofluoric acid prior to setting, making the surface appear more life-like.

British Jour. Den. Science.

The Senses in Dental Diagnosis.—Let every dentist strive for the smell of a florist, the ear of a Beethoven, the touch of a Mendelssohn, and the sight of an Agassiz.

C. F. Cooper, Ohio Den. Jour.

ITEMS.

CEMENT FOR BROKEN CASTS.—Dissolve sheet celluloid in ether, making a thick creamy paste. Coat the broken surface thickly and hold together for a few moments, then allowing it to harden not less than three minutes before handling.

Dental Weekly.

There are not many odors more disagreeable than that of an old crown or a bridge. Dip them in electrozone and they will be deodorized immediately. Thanks to the *Dental Review* for the above. Such odors are hard to remove from the hands, and above all, let a dentist have odorless hands.

Weekly.

Dr. Haskell, of Chicago, Ill., has been called to Sweden this summer to demonstrate his methods of prosthetic dentistry. On his way there he accepted an invitation by the German dentists to give a similar course in Berlin.

Journal für Zahnheilkunde.

ANODYNE FOR TOOTHACHE.—Howe recommends the following anodyne: One part carbolic crystals and three parts menthol are melted together; the light amber colored, aromatic fluid which results has a burning, but not caustic taste, it is readily soluble in alcohol, ether, chloroform, and most oils, and has the property of dissolving iodoform and aristol. The solution is said to possess strongly antiseptic properties, but is specially valuable for its anæsthetic action, especially in the case of painful tooth-pulps.

British Journal.

MOULD IN CELLARS.—There are few things more suggestive of unwholesome conditions, if not conducive thereto, than mustiness in cellars.

Unslacked lime is best suited for this purpose. It is blown, in the shape of a fine powder, on the walls of the cellar and into the joints and crevices by means of the bellows, or else thrown on with the hand. The walls must be damp; dry walls have to be well moistened previously. The lime slakes with the adhering water and kills all organisms. On the day following the walls are washed off, and, as experience has proved, the cellar will remain free from mould for at least two years.

Sci. Am.

A FAMILY PLATE.—Lady called to have full plate repaired. Said it fell on the kitchen stove and was badly burned before she could rescue it. I remarked: "It must have fit quite loosely." "Yes," she said, "mother wore it before she died, and it has never fitted my mouth at all well."

C. F. M., *Detroit.*

TO MAKE A SOLUTION OF A DEFINITE PERCENTAGE.—Suppose an ounce of a five per cent. solution is desired. Multiply the number of grains (480) in an ounce by .05, which will give 24.00. Thus 24 grains, say of carbolic acid, added to an ounce of water, will give a five per cent. solution.

Suppose a dram of a four per cent. solution of cocain is wanted. Multiply the number of grains (60) in a dram by .04, which will give 2.40 (two and forty one-hundredths) of a grain. This added to a dram of water will give a four per cent. solution.

Dental Weekly.

THE TEETH.—The savage neither keeps a toothbrush nor employs a dentist; his teeth wear out by use, but they do not decay. The civilized man loses his teeth in spite of the dentist and the best of care. One reason suggested why the savage has stronger teeth is the fact that his teeth are better nourished than those of the civilized man. He eats harder food, which gives abundant exercise to the jaws, enlarges the muscles and blood-vessels of these parts, and keeps them well supplied with blood; while the civilized man eats soft food, which does not exercise the jaws and their muscles or blood-vessels, and does not bring abundant food to the teeth to keep them strong and healthy.

Family Doctor.

LIQUID AIR AS AN APPETIZER.—Liquid air presents surprising possibilities as a medicine. A Russian physician has already begun to experiment with it. He placed a dog in a room with the temperature lowered, as stated in *London Engineering*, to 100 degrees below zero. After ten hours the dog was taken out alive, and with an enormous appetite. The physician tried the test himself. After ten hours' confinement in an atmosphere of still, dry cold, his system was intensely stimulated. So much combustion had been required to keep warm that an intense appetite was created. The process was continued on the man and the dog, and both grew speedily fat and vigorous. It was like a visit to a bracing northern climate.

It is stated that Turkey lost less than one thousand men in battle in the Greek war, but nineteen thousand died in Thessaly of disease, and twenty-two thousand were sent home invalided, and of the latter eight thousand subsequently died. Among the dead were seventeen army surgeons.

CHICAGO CAPITALISTS DEVELOPING IMPROVED METHOD OF PRODUCING STEEL.—Chicago capitalists are engaged in developing a new method of producing steel, which they believe will revolutionize the tool steel business. Their claim is, that by the process of which they have obtained control, all tools requiring an iron body for strength and a steel edge or covering can be produced in one solid piece, and at one-sixth the cost of the old method. The claim is that this new process, a chemical one, can convert any piece of wrought iron stamped in the required shape into steel in six hours, whereas by the old method it required from six to eight weeks to convert iron pigs into steel.

PAINLESS WORK.—The rapid and painless introduction of fillings with Dr. Trey's gold, carefully worked, gives an operation which gives the greatest satisfaction to operator and patient. It has been urged that methods and materials, allowing of more ease in their use, have a tendency to promote carelessness and slipshod work, but it has always been my experience that whatever the material, either gold, amalgam, cement, or gutta-percha in any form, unless carefully inserted, the result will be unsatisfactory. One of the greatest benefits of the recent innovations over former methods is the possibility of doing away with the popular impression that the dental chair is a place of torture and execution, and that it is generally no longer necessary to suffer much to have work done.

A. G. Reinhardt, in Ohio Journal.

I am surprised to learn that Professor Black claims that tooth structure does not change. One can hardly believe that such a statement emanated from our highest source of this field of scientific knowledge. If he is right and has been quoted correctly, then there are many of us wrong. Few of us who have observed carefully the structure of teeth but what have convinced ourselves long ago that structural changes were continually going on. I hope we shall hear further argument on this subject by Dr. Black.

His other statement, that it matters little what filling material is used, is likewise misleading, especially to the younger generation of dentists, for the Professor has scores of these who place considerable reliance in what he gives to the reading members of the profession over his signature. We have always been taught, and have personally considered, that certain teeth could be better preserved by using certain filling materials; in other words, the cavity and tooth suggested the material to be used.

D. Elmer Wibur, M.D., D.D.S., Washington, D. C.

DR. E. DE TREY'S "SOLILA" GOLD.—It seems to us that Dr. E. De Trey's "Solila" gold must almost revolutionize operative dentistry. Have you tried it? At the first demonstration I saw, it seemed there must lie some magic in the hands of the operator. Surely it was not possible for gold to be manipulated as we were shown it could be done, yet upon trial and practice I find it is something that to my mind is to rank as one of the greatest boons to dentistry. Dr. De Trey has devoted twenty years to experimenting and research while endeavoring to perfect this gold, and how well he has succeeded you should learn by a trial, for it seems to me he has left nothing to be desired.

The Dental Century.

TREATMENT OF CHRONIC ABSCESSED TEETH.—After securing a good opening and washing out débris from the cavity and bur canal where possible with Gates-Glidden drill, syringe and dry canal. Pump hydrogen-peroxide, or better, pyrozone, well up the canal. Mix the powder on a glass slab with 95 per cent. carbolic acid into a creamy consistency, and after thoroughly drying out, force the carbolized powder up the canal with a smooth, coarse broach, filling up canals and chamber of the tooth, and seal with phosphate cement or gutta-percha. Leave for two weeks to a month. When the dressing is removed and the roots filled with chloro-percha, and tooth permanently filled, a second application is rarely necessary.

The question has been asked and may again be asked: "Can we not get as good results from the campho-phenique liquid?" I say most emphatically we cannot; the therapeutical action of the powder being more concentrated, active, penetrating and curative; and, again, the escharotic danger in application is minimized.

Dr. D. C. Smith, Stouffville, Ont., in Dominion Journal.

EDITORIAL.

PROCRASTINATION.

Procrastination is not only "the thief of time," but the thief of many precious opportunities and golden harvests. He is a thief that spoils our best thoughts in the bud, that allows weeds to choke our choicest fruit, that turns our most beautiful roses into wild briars and leaves us a desert for a garden.

Like a shiftless sluggard, he cares nothing for his spoils. Having nothing of his own to lose, he is unscrupulous in what is of value to others. He blights our hopes, frustrates our plans, spoils our labor, and then just laughs at our losses, though he makes no gains for himself. Like a prodigal he robs us of our honor, scatters our treasure and destroys our brightest future. He prevents the maturity of all our fruit, and then, after tasting of what might have a luscious harvest, he throws it all away as snarly, bitter, sour fruit, worth nothing even for a thief.

Procrastination makes no burdens lighter, no tasks easier, no perplexity simpler. It frustrates our most cherished plans, thwarts our best designs and destroys our brightest prospects. It disgusts our warmest friends, drives away our best patrons and spoils business.

On the other hand, promptness is an angel of the present, crowding us with precious opportunities and crowning us with a halo of victories. His *now* is the inspiring watchword. His *present* is the day of wisdom and gain and honor, and his chief rewards are for present achievements. "To-morrow," he tells us, "is full of uncertainty; it may be dark or dismal or unpropitious, and I may not be with you." But "spring to your work now!" he cries, and he hugs us close to be in every detail of our labor. No wonder friends are won, patrons are pleased and business prospers.

EATING.

Fast eating is sure to be injurious. To properly prepare the food for digestion it must be thoroughly masticated. The soldier with his hard tack, and the heathen with his tough meat and unleavened bread, are forced to eat slowly, which is to be commended, for they are obliged to use their teeth vigorously, and thus prepare their food thoroughly for their stomachs. This is a prominent reason for their good teeth and good health. A soldier of our Civil War once said to me: "When I went into the army my teeth were so loose and sore I could not eat common food comfortably; but in a few months after I was obliged to eat hard tack my teeth became solid and strong. I thought at first I should starve on my hard fare, but I got to love it, as I came to know what real hunger was, and as my digestive organs became vigorous and healthy I gained in flesh, health and spirits."

Rapid eating is still worse when it is caused by the hurry of business, or by anxiety or nervous irritability, or by the common habit of "bolting" our food. Such eating is sure to produce indigestion or dyspepsia. But even slow eating, if it is only mumbling the food, without really masticating it, is quite as reprehensible. The teeth, as well as the stomach, are made for labor, and neither can have their proper work to do if only paps and broths and pudding and hashes and other soft and artificially-prepared foods are crowded into the stomach, as though the cook in the kitchen could masticate and digest our food for us better than the natural grinders and the peristaltic movements and chemical action and assimilating power of the stomach.

Those people who shovel great vulgar mouthfuls of food into their mouths and bolt it down, as though they had but ten minutes for a meal, are gormandizers instead of polite people. They know little of the pleasure of deliberate eating, nor the luxury of satisfying hunger, and certainly they are laying the foundation of disease. Dry, hard food, vigorously chewed, stimulates the flow of saliva, strengthens the teeth and keeps them healthy, and invigorates digestion.

I never knew the sweetness there was in bread till I was

obliged to eat it very dry and stale without butter. Oh, what a pleasure it was to chew that hard, crisp bread! How luxuriously the saliva watered it, and how it satisfied hunger and cured dyspepsia. That was many years ago, and though the necessity lasted only a few months, I have always since liked dry bread, and all the better if it is quite hard and stale.

Then, again, rapid eating is apt to encourage over-eating. We hardly realize we have eaten enough before we have eaten too much. Over-eating is a vulgarism as well as injurious. I asked a lady at my table if she would have something additional, when she replied:

"Oh, no; I am full quite up to my throat."

Was she really a lady?

We should never entirely satisfy our hunger, and especially never eat till we are conscious of fullness; for it takes a little time for the digestive organs to respond to a satisfactory supply.

Few people eat too little; most eat too much. Few people know the luxury of eating, because it is not preceded by a keen, healthy hunger which prepares the stomach for a fresh supply.

SAVE YOUR GOOD THOUGHTS.

We all have them, and we all lose more of them than we should. We gather good thoughts from others,—from books, discourses and conversations,—that we ought to husband as so much gold, but we do not. Most of them go to waste. The fact is, the difference between a wise man and a fool is not so much the difference in the capacity of the intellect as in the use made of the good thoughts which crowd into the brain.

While at college we had a student we thought hardly half saved. He was the laughing stock of the whole school. He never pretended to get his lessons as the rest of us did; and yet somehow he seemed to take in the main facts and hold them, and work them over in his mind. His note book was a perfect medley. But let there be a dispute on any important statement of one of the lecturers, or of any one else, that he thought worthy of pres-

ervation, and he was sure to find it in his straggling note book. And he had it in his head, too, and he had thought it over till he knew what it meant. But he was so ignorant of common subjects and so blundering in his classes no one thought he would pass his final examinations; but he did, and mainly because he seized on the important points of each day and held them for use.

To the most ordinary person has come at least one important thought every day of his life,—thoughts every one of which should be treasured for practical use, and some of which will some time be, if preserved, invaluable,—just fitting into some exigency, or solving some puzzle or suddenly letting into the mind a glorious flood of light when we are grouping in darkness. But where are they? We did not preserve them. What have we done with them? When we most need them they are lost to our memory. And thus we are no better off for having had them.

It is with our good thoughts as it is with our dollars. Dollars come to all of us; but we have all proved that it is not the number we receive that makes us rich so much as the number we retain and make a good use of. Few classes of business men receive more dollars as profit for work done than dentists, but how many of us are rich? And we are all supposed to be learned. That is the reason we are called a learned profession and each of us are esteemed a professor. But how many of us make such a good use of our knowledge as to do good work? We stumble and blunder and are puzzled and do poor work, not because we have not been taught right—in fact, our current reading and our own experience have taught us much better than we do—but we have let our best thoughts slip out of our mind just as we have let our dollars slip out of our pockets. Because we have not systematically and immediately put our bright thoughts snugly away where we can find them on call, they are lost to us when most needed. Unassisted memory is not enough, just as sometimes our immediate earnings are not sufficient for our emergencies. Where is our reserve for just such times of need? Lost, because we so easily parted with it, instead of putting it in a safe place for future need. And so it is that we are left in poverty of mind and purse.

Quite a celebrated minister said to me recently: "Some call me smart and witty, and give me credit for a wise head; but really I seldom give out an original thought. I am so in the habit of dotting down and arranging all the best thoughts I think or hear or read that after they have become cold I hardly discern which are mine and which are borrowed or bought."

The late Professor Garrison once said to me while he was writing his great book on dentistry: "I hardly know whether to call my book a composition or a compilation, my thoughts and other men's thoughts are so mixed up in it. Perhaps you saw me just now make a marginal note. It was a practical idea I got from this little conversation. Was it your thought or mine? If I was challenged to say I could hardly tell. But every day when I get an important thought bearing on the subject of my book, I jot it down in its proper place whether it is mine or another's."

Reader, let us do likewise.

Some think I am a little out of my sphere as a dental editor when I discourse about morals and miscellaneous subjects foreign to dental practice. Perhaps I do wander a little too much, and yet I hope I do no harm. Perhaps I sometimes do good, for we are all susceptible to improvement if properly approached; and a man that is bettered in his general character ought to be a better and more acceptable dentist.

When I was a practicing dentist I sometimes made myself obnoxious by trying to point a moral during my work. But it was generally because I did not do it in a kindly spirit, or blundered in my choice of words or opportunity. I once said to a young lady, a perfect stranger, as I severely hurt her in extracting a tooth: "I am very sorry I had to hurt you so. But even that pang of pain was not as bad as the pang of a guilty conscience."

She immediately replied: "I don't thank you for your impertinent moralizing, sir. You have no business with either my conscience or my morals."

About a year afterward I was sent for to come to see a very

sick young lady who had been my patient. I tried to excuse myself, but her messenger persisted, and I went. She wanted to apologize for her reply to me, and to assure me that my remark had morally changed her whole life.

I have not been so fortunate in some of my moralizing; and with all my experience I blunder yet. But I have some evidence that sometimes young people are stimulated to a better, cleaner, higher life, and therefore helped to become more acceptable and successful dentists.

STYLE.—The first study of an author is to study simplicity and clearness. This is his first claim to be read, and to be read twice, and to be admired and loved. There was this to be said of the Addison style, which in the first part of our century held such sway: It was clear and frank. The only trouble was with its art. It tried too plainly to be very precise. The carpenter constructed his sentences by rule, and told us of it in every line. Dr. Johnson's style was also at one time immensely admired. It was ponderous and grandiose; although, it must be allowed, he never tried to hide himself in subtleties. It was his words that made the trouble. He came thundering and cannonading down the pages with a whole dictionary in his guns. Most of us who are scholars can move our brains easily in the midst of 10,000 or 20,000 words; but when it comes to 50,000 they may be used with precision and with no attempt at subterfuges, yet they make us too much labor.

We prophesy great success for our friend Haskell. He is probably the most noted prosthetic dentist of the age, and his fame goes before him.

Real ivory can be distinguished from the vegetable article by the action of concentrated sulphuric acid. This has no action on the former, but in the course of about ten minutes it colors the vegetable ivory pink. The color can be washed out.

WARRANTING FILLINGS.

"Doctor," said a patient, as he questioned the propriety of having a tooth filled, "do you warrant your work?"

"No," we replied, "our work will not be everlasting, any more than nature's is."

"Then your filling will not preserve the tooth?"

"No; there is no preservative quality in a filling; it merely protects the cavity from farther decay just as a sound tooth is protected by enamel."

"Then it may have to be filled again, however well you may fill it now?"

"Certainly; our work is no more perfect than Dr. Nature's. You see by this decay that his work sometimes gives way. In fact, we cannot expect to rival nature. The enamel in a sound tooth is a better protection against decay than we can hope our gold to be, though I do my very best work. The causes of decay will still go on, and it may undermine my work just as it will in nature's better work. For teeth now sound may by and by decay. Why should my filled tooth resist the ravages of decay better than its enamel did? Teeth should be frequently inspected, especially in the first half of normal life, and at the first appearance of decay, whether of filled or unfilled teeth, it should be repaired. Then few teeth would be lost, and the cost of repair would be small. It is the neglect of teeth that is expensive."

If dentists would thus be candid, there would be less after-blame and annoyance, and patients would respect our reasonable representation of the subject. Dentists must guard against promising too much, and patients must not be allowed to expect too much.

We do not say this to protect poor work. If our work is not the best that can be done, we should cheerfully stand the blame and be quite willing to repair the deficiency. But such expressions as "I will warrant that filling to last as long as you live," is misleading. It sounds nicely, but the patient goes away over-confident in possible results, and gives no allowance for even reasonable defense in future exigencies.

Candor is golden, and in the end will bring more gold than over-statements.

KERNELS.

READING ALOUD.—Reading aloud is an excellent practice in the home circle, and medical authorities agree that it is a most invigorating one. Persons who have a tendency to pulmonary disease should methodically read aloud at stated intervals, and even recite or sing, using caution as to posture, articulation, and avoidance of excess. Here is where our scientific professors of vocal culture in elocution and singing should find immense service in the establishment and development of health.

The antiseptic and disinfectant properties of formaldehyde have been extensively investigated during the past two years, and the results obtained, both by bacteriologists and in the practice of various industries, have given it an important position among bactericidal agents. Formaldehyde is gaseous at ordinary temperature, but is now obtained commercially as a concentrated solution containing forty per cent of the aldehyde. Most of the published experiments have been made with this solution, which is placed on the market under various trade names.

Intelligence is never afraid to face any truth, knowing that each one has a message for those who will heed it. The entire past, whether that of individuals or of nations, with its mingled stores of good and evil, may be so read and studied as to draw forth unmixed blessings for the future. It is this purpose, held closely in view, that enables us to dwell for a time on the dark passages of our lives without despair or hopelessness. If, instead of indulging in vain lamentation, which of itself is only paralyzing, we examine its sources, thoughtfully analyzing their nature and their effects, and distinguishing between actions and intentions, we shall be able so to apply the results to our present life and conduct as to produce hope and effort and progress from what at first sight seemed to offer only regret and self-censure.

A millionaire with imagination is a contradiction in terms. He is never original, never apparently has the slightest desire to have a "run for his money." His object, when the desire for soft living and show is satisfied, is to make his heap bigger, or at any rate to guard it from waste. We note the fact, but we do not regret it. On the contrary, we believe that society gains a great

deal from the fact that millionaires are so unimaginative and so unambitious. Were they what one might expect them to be, instead of what they are, they would trouble the State, instead of, as now, acting as quiet reservoirs of cash. Imagine the mischief a group of millionaires might do if they all agreed to jump and splash and raise waves together. As it is, though the fattest, they are also the quietest of all the birds on the duck-pond.

To introduce liquid medicament of any kind into a root quickly and effectively, dip a slender pair of pliers into the liquid with points just meeting; withdraw carefully so as not to touch sides of bottle, and, placing points at mouth of root-canal, allow them to spring apart slightly, when your medicine will be drawn by capillary attraction into every portion of canal (previously wiped out). This method works equally well in upper or lower teeth and beats cotton or an abscess syringe—try it. . . . If root is abscessed, place ball of unvulcanized rubber in open end, or cavity, and force it up with end of instrument handle or bur-nisher. The root being already flooded with hydronaphthol sol., H_2O_2 , aromatic sulphuric acid or what you like, the excess is forced through into sac, or even out through fistulous opening in gum.

J. E. Waterbury, D.D.S., Holly, N. Y.

OVER-EATING.—The dictum that while civilized man cannot live without dining, he might live a good deal longer without so much dining—or, rather, without dining so extensively—may be accepted without any reservation. A celebrated physician once said that he had been convinced by circumstances that had come under his notice in the course of his experience that mischief in the form of disease has accrued to civilized man from erroneous habits in eating. Many of our best-known medical men say that the habit of over-eating is at the bottom of most troublesome diseases. There is no doubt that the habit is most often contracted in childhood. There are many mothers who feed their babies as often as they cry, taking it for granted, in the most imbecile manner, that the baby cries for food, when more often the helpless little creature is crying because it has already had too much food. When the stomach once becomes accustomed to being crowded with food, if the supply is cut short, there is at first a gnawing sensation that is frequently mistaken for hunger. If people who experience this will only persevere a little longer in their abstinence they will find themselves greatly benefited by it.

FOR OUR PATIENTS.

THE POWER THAT MOVES THE WORLD.

He who dares assert the I,
May calmly wait
While hurrying fate
Meets his demand with sure supply. *Helen Wilmans.*

So nigh is grandeur to our dust,
So near is God to man.
When Duty whispers low, "Thou must,"
The youth replies, "I can." *Emerson.*

PROGRESS OF SCIENCE IN THE FUTURE.

Prof. Ludwig Buchner, after reviewing briefly the scientific progress of the closing century, remarks, in reference to the future outlook: "It may be that we are, in respect to the coming century, in the same immature mental condition in which the people of the eighteenth century were with regard to the nineteenth. If someone in the preceding century had dared to predict the wonderful achievements of the nineteenth, he would probably have been declared a fool, and treated as was Robert Mayer in Germany in this century, who, after the discovery of the law of the conservation of force, was put into an insane asylum. A like fate might befall the man who should dare now to cast a horoscope for the twentieth century, and to predict the progress of the human mind in the various domains of scientific research. After all, they may be right who, in spite of all these acquisitions on which we so justly pride ourselves, are of opinion that we are still moving in only the initial steps, in the leading-strings of evolution, and that we are yet very far from the goal of those material and ideal aims which the human race in its unremitting onward struggle is destined to attain or to show its capacity of attaining. The great Sir Isaac Newton used perhaps the most appropriate simile when he compared men with children who on the seashore are picking up here and there a curious pebble or colored shell, while the great sea of truth lies still unexplored before them. We can only conjecture as to the probable progress, as we cannot know which position we occupy in the course of human evolution, whether we are still in its beginning or well advanced."

Family Doctor.

TURQUOISE BEDS IN CALIFORNIA.

The beds are situated in the narrow desert district south of Death Valley, almost at the point where three States—California, Nevada and Arizona—are joined together. They are west of the Colorado river, but in California. This section is a desert, with little vegetation, scarcity of animal life, and with a greater scarcity of water. The beds are scattered over an area of from thirty to forty miles in extent, but the principal ones, as regards quality and quantity, are found in a territory not more than fifteen miles long, by three or four miles wide.

It is a volcanic region, characterized by ancient volcanic rocks of various kinds. Among the lava flows and basalt are found numerous low hills, and on the sides of these are more or less distinct pits, from fifteen to thirty feet in diameter. These pits are the remains of the prehistoric turquoise beds. Some portions of the district show only turquoise veins, while a few miles away are found stones in the form of kidneys of various sizes, from that of a pea to a large bean. The turquoise is generally found in what are known among miners as pockets and small seams, principally pockets.

Other places examined bear every evidence of having been worked by some ancient race, according to Prof. Eisen's report to the California Academy of Science. There are to be found in them fragments of Aztec pottery, prehistoric stone implements, used in chipping the rock. The polished stones found are in the same shape as those in the possession of the Aztecs of Montezuma's time. The beds can be reached by rail from Blake, a small station on the Santa Fé road, about twenty-five miles west of Needles, thence to Manvel, a supply station in the mountains, and from Manvel by wagon road.

Mrs. Fadde (faith-cunist): "How is your grandfather this morning, Bridget?"

Bridget: "He still has rheumatism mighty bad, mum."

"You mean he think he has rheumatism. There is no such thing as rheumatism."

"Yes, mum."

A few days later:

"And does your grandfather still persist in his delusion that he has rheumatism?"

"No, mum; the poor man thinks now that he is dead. We buried him yisterday."

Atlantic Med. Weekly.

QUICK PROCESS FOR NICKEL PLATING.

There is no reliable method of depositing nickel from its cold solution, but a thin and adhesive coating may be given articles of brass, iron, etc., according to the *Standard Formulary*, by the following process: Boil in a copper vessel a saturated solution of zinc chloride and an equal quantity of water. While boiling add hydrochloric acid, drop by drop, until the precipitate at first thrown down is redissolved. Now add zinc in powder, until the bottom of the kettle is nearly covered with a precipitate of zinc. The bath is now ready for the addition of a salt of nickel, and you may use either the sulphate or the nitrate. Add it in sufficient quantity to give the bath a strong green color. The articles to be nickered are now hung in the bath by means of a zinc wire, or a strip of sheet zinc, and a few pieces of the latter are thrown in along with them. Raise the heat to a strong boil and continue it for several minutes, or until the articles are covered with a bright coating of nickel. The articles should be thoroughly cleaned and free from grease before being put in the bath.

American Druggist.

SOURCE OF COLOR.—The sources of colors used in the arts is given as follows: The cochineal insects furnish the gorgeous carmine, crimson, scarlet and carmine lakes; the cuttle-fish gives sepia, which is the inky fluid which the fish discharges when attacked; Indian yellow comes from the camel; ivory chips produce the ivory black and bone-black; the exquisite Prussian blue comes from fusing horses' hoofs and other animal matter with impure potassium carbonate; various lakes are derived from roots, barks and gums; blue-black comes from the charcoal of the vine-stock; Turkey red is made from the madder plant, which grows in Hindostan; the yellow sap of a Siam tree produces gamboge, while raw senna is the natural earth from the neighborhood of Sienna, Italy, and raw umber is an earth found near Umbria. India ink is made from burnt camphor; mastic is made from the gum of the mastic tree, which grows in the Grecian Archipelago. Bistre is the soot of wood ashes; very little ultramarine—obtained from the precious lapis lazuli—is found in the market. Chinese white is zinc; scarlet is iodide of mercury, and vermilion is from quicksilver ore.

Industrial World.

DENTAL BRIEF.

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ORIGINAL COMMUNICATIONS.

DENTAL ABSCESS.

Dr. Harry B. Hickman, Philadelphia.

I seldom extract a tooth, or even a root, because of an abscess or of pulpitis, if it can in any way be of further use to the patient. A patient comes in with terrible odontalgia. What is your duty? First, make an examination for exposed pulp. If you find it, cleanse the cavity as well as possible and apply a paste of oxide of zinc, iodoform and oil of cloves, which not only anesthetizes the pulp, but makes a filling that will last several days. When your patient returns, you have the pulp without inflammation, and if it is necessary, then apply arsenic with little pain.

Suppose the pulp is not exposed. First, see if the pulp is vital by the application of heat by means of heat or with cold. In vital pulp there will be little or no reaction from heat, but cold soon causes pain.

If you find a dental abscess, apply the dam, disinfect tooth, and open up with a new drill or bur, and never use a nerve broach the second time. It should be thrown away.

Now wash out with dioxide of hydrogen, and clean canals of all debris. If they are too small, do not hesitate to apply a little 50-per-cent. solution of sulphuric acid, and with the aid of a nerve bristle it requires only a few moments to enlarge or to find hidden canals. This, of course, is to be neutralized by bicarbonate of soda. If there is any danger of injuring any other part of the tooth, pour a little melted vaseline around and over the tooth, then the acid can do no harm and will confine itself to the place you want it. The sulphuric acid unites with the lime of the tooth and forms calcium sulphate, which can be removed with warm water.

If there is a fistula on the gum, force wood creosote or carbolic acid through the fistula by means of abscess syringe or

pumping with bristle wound with cotton, and proceed to fill with aristo-paraffin, forcing that also, till it appears through the fistula. The needle-like filament which has come through the fistula will do no harm, but will shortly be absorbed.

If a blind abscess, proceed in the same way in keeping everything around in a sterilized condition, wash out with dioxide of hydrogen, but do not use much force in pumping it into the canals, or you will cause toothache. After drying out with alcohol and hot air, apply a dressing of cinnamon oil, which is the best antiseptic if it is a posterior tooth, but if an anterior tooth, pack the canals full of carbolic acid and cotton, or creosote and cotton.

Never apply iodoform or cinnamon oil in an anterior tooth, because you will get a peculiar dirty straw color in your devitalized tooth that no bleacher will remove.

If the abscess is in the acute stage, pack antiseptic cotton in the canal, that the gases may escape but no germs can enter. In three days change dressing. If inflammation has subsided, disinfect again thoroughly and seal cavity with gutta-percha, at the same time telling the patient to return at first sign of pain. Never treat a tooth without the rubber-dam unless it is a case of necessity.

A LOST ART RESURRECTED AND DENTAL SCIENCE PROGRESSING.

Dr. B. F. Arrington, Goldsboro, N. C.

Dr. Norman W. Kingsley, of New York, informs us through the *Items of Interest* of the increasing scientific labors of Dr. Jenkins, of Dresden, Germany, and of the gratifying success that has followed his efforts to produce a plastic material (porcelain enamel) as a substitute for gold for filling cavities in teeth. He says "he spared no expense; all the resources of scientific experts were at his command, and he was ultimately rewarded by the invention of a porcelain enamel which can be made to match the natural teeth in tone, texture and surface so closely as to defy detection. I have been called many a time to inspect a mouth where he had inserted these porcelain fillings in teeth, and with close scrutiny have sometimes failed to detect them."

Dr. Abbot, of Berlin, says: "I consider the whole process, and the enamel body in particular, one of the greatest achievements in modern dentistry, especially from the æsthetic standpoint."

Dr. Spalding, of Paris, writes: "I have most surprising and delightful results from using Dr. Jenkins' porcelain enamel, and my patients are enthusiastic in praise of this process."

Dr. Kingsley thoroughly endorses the merits and superiority of the new filling material, and says: "Gold fillings in teeth are unsightly and savor only of barbaric splendor. It is the savage alone who would decorate his teeth with gold. Such conspicuous exhibitions of the jeweler's art violate æsthetic taste and would not be tolerated by any refined person were it not that in this country people have become so accustomed to these expositions, and with it possessed of the idea that in this way only can they have their teeth preserved, that they submit to that which would otherwise be grossly offensive. It is bad enough when gold becomes a necessity for the preservation of the teeth from further decay, but when the employment of gold is sought for purposes of display and to attract attention it is an offense against all refinement and culture." Well said and true.

Dr. Kingsley occupies a position in the forefront rank of distinguished personages engaged in the practice of dentistry, and is well and favorably known, not only in this country, but abroad. What he has said, or may say, on any subject pertaining to the practice of dentistry is worthy of respectful consideration by old and young in the profession. His bold condemnation of the disgusting and demoralizing practice of gold exposure in the mouth is timely and to the point, and doubtless will be appreciated by every right-thinking and acting member of the profession.

Corruptions and abuses in the profession must be exposed and slaughtered, and the sooner the good work is accomplished the better for the credit and advancement of the profession.

Let us take courage and hope the new material produced by Dr. Jenkins may prove a grand success and a beautiful feature of advance in the practice of dentistry.

AMERICAN *vs.* EUROPEAN PROFESSIONAL EDUCATION.*

There are really no foreign degrees in dentistry in Europe, the nearest approach to this being the Licentiate in England. America is peculiar in having a distinct and separate diploma for

* Report of the Committee on Foreign Relations of the National Association of Dental Faculties, made at Omaha, Nebraska, August 29th. 1898.

the graduates of distinctly dental colleges. We can not hope for the recognition of this distinction until our course of instruction is fully comprehended in Europe, and the reputability of our degree established. The report of your committee, then, will specially consider the preliminary steps which we believe it proper to take before commencing further agitation. The subject is of the deepest significance, and involves our whole system of education. There can be no mutual recognition until there has been secured some common ground on which the profession of the various countries of Europe and of America can meet. At present the systems are too diverse, and involve too many seeming contradictions to allow any real reciprocity. Yet that is a consummation devoutly to be wished, and certainly we in America should spare no pains in the endeavor to bring it about. Hence the appointment of a committee to take the subject into consideration by the supreme authority in matters educational among us was doubtless a wise movement, and one which, in the opinion of your committee, should be persistently followed up. Indeed, the committee has received many letters highly approving of the action taken, with the promise of a hearty coöperation on the part of American dentists resident abroad.

That this body may act intelligently, it seems necessary in this report to review, as concisely as is possible with thoroughness, the real situation, with the view of securing a better state of affairs.

It must be remembered that scholastic dental practice, with the separate teaching which has been found necessary, is of quite recent origin. The first distinctive dental school was established in America in 1840, less than sixty years ago. For more than forty years all didactic and class instruction was confined to this country. Within the past twenty years dental schools have been organized in some of the countries of Europe, usually in connection with hospitals, for the purpose of securing clinical instruction and material. There has never been any reciprocity between the schools of the two continents, if we accept the recognition temporarily accorded by England to the dental departments of Harvard and Michigan Universities. The conditions obtaining in the two continents too widely vary. The one is long settled, possessing the real erudition that can only be found in nations that have a past, but imperatively dominated by the traditions and precedents which are the natural outgrowth of heredity. The other has been a new country, with no educational or other institutions hallowed by centuries of growth and progress, and, pos-

sessing the weight of ancestral influence. In the settlement and development of this country our people encountered obstacles totally unknown to the older States of Europe. Precedent there was none to guide, and tradition there was none to influence. The problems which confronted them were conditions existing, and not theories for consideration. The forces of nature were in one sense our foes, and not our allies. It was necessary first to overturn and reconstruct that which nature had already constructed. The struggle to accomplish this made of us a practical, inventive, ingenious people, who care mainly for ends and little for methods, while Europe respects no practical accomplishment that is secured through irregular, unacknowledge methods.

All these matters are reflected in the status of the dental profession here and abroad. Europe can not be brought to believe in a practice not founded in a liberal preliminary education, while we are, as a whole, too careless concerning antecedents, so long as anything practical is assured. In Europe, if a man has a university education he is popularly supposed to be competent to practice any profession—law, medicine, divinity, or any of the specialties—any distinct instruction being required only to make him acquainted with the tools that he must use. The university degree is supposed to include everything lesser, and hence there is no necessity for any other, that comprising all.

We, in America, have instinctively recognized the desirability of a university training by founding many schools without sufficient endowment for their independent support, thus really cheapening the university course. This has been through the endeavor to extend educational facilities to the masses, here again looking toward ends and not means.

The natural consequence of all this to our profession has been that in America to-day are probably found the best skilled operators and the highest development of practical work, while in erudition we are in the rear of several European countries.

It may thus be seen that it is difficult to find a common ground on which the professions of the old and the new worlds can stand in equality. Europe will tolerate nothing that does not bear the stamp of regularity. We are satisfied with anything that accomplishes the end sought.

The curricula of the schools of the two continents materially differ. But that could be overlooked, or they might be harmonized. The essential variation lies in the methods or way through which admission within the ranks of the profession is secured. The old countries jealously guard the doors of entrance. We

throw them wide, or at the best erect a barrier that is too easily overleaped. Europe declares that the learned professions must be reserved for the learned classes, and that any who enter must come through the door of a liberal education. We urge that the only sufficient qualification is fitness and practical knowledge. Europe will never come to our standpoint. Can we, or should we, attempt to reach hers? In the process of time this may undoubtedly be brought about. Already in America we see the effect of a comparatively low standard of requirements in the overcrowding of the professional ranks, so that they are losing their distinctive respectability and status, and with that their influence for good is circumscribed. Should this acceptance of the professional tone continue for any length of time there will be no distinction between the professions and trade. Indeed, we find to-day many who contend that no line of demarcation should be drawn. Colleges of law, medicine and divinity, with their specialties of dentistry, pharmacy, etc., are so multiplying that the consequence must eventually be self-destruction, and the annihilation of all professional sentiment. A limit must be placed on the number of schools, and this can only be done by raising the professional standard to a point that will shut out unworthy and unqualified colleges and their students. When this is done, and our preliminary educational standard is sufficiently advanced, with our practical methods and operative skill we shall be prepared to force the profession of Europe to come to our standard, if we are in advance of them, while if they are ahead of us we will be equally bound to reach their level. Even as it is, we are fast approaching each other, they growing more practical and we more erudite. To hasten the desirable end, in the opinion of your committee this association should endeavor to secure the coöperation of our confreres of the different countries by some official reciprocity, and we believe that the best method to accomplish this would be through the appointment of a standing committee on foreign relations, whose duty it shall be to make us better acquainted with European educational methods and curricula, and to inform them of the advantages of ours. This might smooth many of the asperities and remove many of the prejudices which now work to the detriment of both.

In filling with cement, where the pulp is nearly exposed, it is my habit to apply Canada balsam and then a disk made from linen paper.

A. Osgood.

NEW JERSEY DENTAL LAW OF MARCH 17th, 1898.

ANNUAL REGISTRATION.

SECTION 10. That hereafter there shall be an annual registration of every person, persons, company or association practicing dentistry within the State, together with an annual registration of each and every assistant in the employ of every such person, persons, company or association. It shall be the duty of the secretary of this board not later than the first day of December, in each year, to prepare and mail to every person, company or association known to be practicing dentistry within this State, a document to be known as the "Annual Registration Blank," upon which shall be proper space for the endorsement of the name, residence and location of office of the person, company or association to whom the same is sent, together with the name and residence of every assistant employed in any such office; and it shall be the duty of every person, company or association, upon the receipt of said blank, to fill in the name, residence and location of office of said person, company or association, and also the name and residence of each and every assistant employed by said person, company or association in any such office; said return shall be fully completed and returned to the secretary of this board within thirty days after its receipt; for failure to comply herewith, the person, company or association shall be liable to a fine of ten dollars, besides costs, to be sued for in the name of the board, in any court of competent jurisdiction; said fine to be paid into the treasury of the board; and any person, company or association making any false statement concerning or touching any matter or thing covered by this section shall, for such offence, be liable to a fine of fifty dollars, besides costs, for each and every offence, to be sued for in the name of said board in any court of competent jurisdiction; said fine to be paid into the treasury of said board.

"THE PROSECUTION OF A DENTAL STUDENT."—It hardly seems possible there were men, enjoying the education demanded at the present day, narrow enough to attempt such unjust advantage of a poor boy struggling to get an education as related in the narrative given. It would have been to the advantage of all those who attempted to defeat his efforts to have loaned him \$100

to help him on, instead of resorting to such measures as mere technicality.

A similar instance occurred in New Hampshire. The young man was brought before the Grand Jury for illegal practice.

One of the jury men told me: "We saw it was a case of petty jealousy on the part of the complainant. We sent for the patient, found he knew he was employing a student and was perfectly satisfied with the work." That jury dismissed the case at once. We are of the opinion that the jury acted wisely. Dental legislation has been enacted for the general good of all, not to deprive people of civil rights or to encourage others to indulge their jealousy and selfishness.

We agree with you that we would have far better graduates if we required a year's pupilage in a good private office prior to entering college.

L. C. Taylor, Hartford, Conn.

TWO PLACES FOR PYROZONE.

You have twisted the pulp off, as you suppose, at the apex of the root, and as usual there is some bleeding. You wrap a broach with cotton and put it up the canal, and repeat the process, hoping each time to see the bleeding stop, so that you can dry the canal and fill it.

But it bleeds and oozes, and keeps on bleeding and oozing, in spite of everything you try to stop it with, until you become weary of trying remedies.

Now what do you do? Do you put a wisp of cotton saturated with some medicine into the canal and make another engagement with the patient? Likely; but if you knew that a little 25-per-cent. solution of pyrozone on some cotton wound on a broach and put up the canal would instantly stop the bleeding so you could proceed to dry the canal and fill it at once, you would certainly do it. Then get a tube of it, and be ready for your next case.

Again, you may be trying to fit a crown to the root of a tooth, and the gums are bleeding and oozing so that you cannot get it dry enough to attach the crown. Then apply some of the 25-per-cent. pyrozone on a lock of cotton, with the assurance that all your troubles will vanish.

It will turn the gums white and burn a little, but it soon passes off, and in a short time there will not be any visible effects of the pyrozone on the gums.

Dr. L. West, Monett, Mo.

DIED LATELY IN HOLLAND.

Dr. Gardner Quincy Colton, through whose instrumentality "nitrous oxide gas" was first used in dentistry, died August 9th, 1898, in Rotterdam, Holland. He had been on a visit to Europe, and was about to return home, when he succumbed to a complication of diseases brought on by old age.

Dr. Colton was born in Georgia, Vt., February 7th, 1814, and was the twelfth child of his parents. He first learned chair-making, and when twenty-one years old came to New York, where he followed his trade, studying all the time, however, in the hope of becoming a physician. In 1842 he entered the College of Physicians and Surgeons, and later studied in the office of the late Dr. Willard Parker.

Two years after, he began to deliver lectures on physiology and chemical phenomena. He had acquired a knowledge of electricity, a science then in its infancy, and invented an electrical motor which he exhibited, illustrating his lectures with it. This motor is now in the Smithsonian Institution, in Washington.

Dr. Colton went to California in 1849, where he searched for gold and practiced medicine among the miners. He was the first man in California to be appointed a justice of the peace. With a competence, he returned to the East and went about the country lecturing, telling his audiences of the anesthetic properties of the laughing gas. In 1863 he established an office in the Cooper Institute. A few years later he was able to visit Paris with a record of 20,000 administrations. Returning to America, he opened offices in Philadelphia, Boston, Baltimore and several other cities, and thus, through his energy and success the use of nitrous oxide gas as an anesthetic became thoroughly established, and dentists throughout the land began to use it. It dates from the rediscovery in 1863.

Away back in 1844, when he was lecturing in Hartford, Conn., and showing the effects of nitrous oxide gas on persons to whom he administered it on the stage, Dr. Horace Wells, who became one of his subjects, was impressed with the possibility of using the gas in dentistry. He told Dr. Colton of his idea, and the next day he had the gas administered to him and a tooth extracted.

Dr. Colton was also an author and a Shakespearean scholar. He published a brochure on Shakespeare and the Bible, and wrote a good deal upon the discovery of anesthesia.

C. S. McNeill, D.D.S., New York.

LINING CAVITIES.

W. E. Driscoll, Manatee, Fla.

I see in the September BRIEF that many very prominent dentists go right ahead discussing the use of amalgam without any lining in the cavity, just as if such a thing had never been suggested.

I wish to say to these gentlemen that I have never yet seen the amalgam that was fit to go into a tooth cavity without some intervening substance better suited for contact with dentine and enamel.

I also think it is time that distinguished gentlemen in the profession should either prove the contrary of my contention or study the matter until they learn what lining cavities to be filled with amalgam really means. Some in your September issue speak of the necessity of making the same retaining points for amalgam fillings as are necessary for gold fillings. Great as the reputation of these gentlemen is, they do not know what lining cavities with a good cement will do, or they would never make any such statements.

Some of them say amalgam will save teeth that cannot be saved with gold, yet do not intimate that a good lining could cut any figure in the premises.

I wish to say to these operators that, with a good cement for a lining, I can make a good, durable amalgam filling in teeth so weak that amalgam alone would be malpractice in comparison. Thin walls can be made to look like perfectly solid teeth, if lined with a good cement, and will last in many instances for years, while if filled with amalgam alone would be black in a week, and crumble away in a year. These are facts, and I propose to hammer away on them until they are recognized as such.

I am willing to sit at the feet of men who know more than I do; but because they are great for some lines of research, is no reason they should not be taken to task by one, however obscure, if he knows they are falling short of teaching what is best.

I have described what I consider the advantages and best method of using cement linings for amalgam fillings so often that I will not repeat them now, more than to say the amalgam is to be pressed into the cement while quite soft in the cavity, and edges carefully finished.

[Many years ago—after I had published my method of nearly filling a frail tooth, or a large cavity, with oxyphosphate,

and then pressing into its soft surface gold or amalgam to be finished when the cement had set—friend Haskell sent me an article showing that this method had been his practice even then for some time, though I had supposed it was somewhat original with me. It is certainly good practice, and Dr. Haskell must have been one of the pioneers in its introduction.—EDITOR BRIEF.]

If every dentist would spend one dollar for the U. S. Tactics, and follow out instructions as therein given, he will develop into as good form as is found in the army, which the foreign armies and nations say is the most elegant army in the world. If you would take these exercises, known as Tactics of American Volunteers, they will do much good. There is one very excellent one for strengthening the muscles of back and shoulders—throw arms out and then back; also spinal motion. Bicycles are a means of exercise, if properly done, but I do not believe in these so-called *scorchers*. Men cannot ride on all fours and be healthful. I want to see a man stand or sit upright, as God intended he should. If the scorcher wants to ride let him go, and the sooner he scorches himself out of existence the better.

Dr. Clayton.

Society not only demands that a young man shall be somebody, but that he shall prove his right to the title; and it has a right to demand this. Society will not take this matter upon trust, at least not for a long time; for it has been cheated too frequently. Society is not very particular what a man does, so that it prove him to be a man; then it will bow to him and make room for him.

J. G. Holland.

BOARD OF DENTAL EXAMINERS OF THE STATE OF PENNSYLVANIA.—The next examination of applicants for license to practice dentistry in Pennsylvania will commence December 6th, 1898, simultaneously in Philadelphia and Pittsburg.

Applications to the Dental Council, Harrisburg, should state in which city the applicant desires to be examined.

G. W. Klump, Secretary.

It has been announced that 90 per cent. of the volunteer recruits to the army who were rejected, failed because they smoked cigarettes.

OUR DENTAL SCHOOLS.

The New York Dental School opened its session for 1898-'99, October 11th, at two o'clock P. M. The exercises were quite informal, consisting only of a short address to the students by the dean, outlining the work of the year and impressing upon them the necessity of an appreciation of the importance of the duties required of them in professional life, the preparation for which begins at matriculation. The high entrance requirements demand that a high excellence in technical and professional teaching be maintained. Nowhere in the United States is this more true than in New York State.

The Vice-President of the Board of Trustees, Henry C. Robinson, Esq., was present, and spoke of the relation of mutual sympathy and support between the faculty and the board, the result of which centered in the highest good to the student.

The same proportional increase in the classes as during the past three years, about 25 per cent., has been attained this year. This is highly gratifying when the restrictions placed by the State are considered.

At the thirtieth annual meeting of the First District Dental Society of the State of New York, held April 14th, 1898, the following officers were elected for the ensuing year: Alfred R. Starr, President; William C. Deane, Vice-President; Benj. C. Nash, Secretary; James W. Taylor, Treasurer; John H. Meyer, Librarian. The standing committees appointed are as follows: Executive Committee—John I. Hart, Chas. A. Dubois, William Carr, Chairman, 35 West Forty-sixth street. Clinic Committee—J. Fournier, John C. Nisley, Arthur J. Swift, Chairman.

The Harvard University Dental School began its thirtieth year on Thursday, September 29th, registering 139 students, divided as follows: Seniors, 46; Juniors, 37; Freshmen, 56. A reception was tendered the students of all departments of the University at Sanders' Theatre, Cambridge, on the evening of Monday, October 3d, where they were addressed by President Eliot, Professor Shaler, Dean of the Lawrence Scientific School, and Professor James.

No fewer than 12,000,000 acres of land have been made fruitful in the Sahara Desert, a most remarkable example of irrigation by means of artesian wells.

OUR QUESTION BOX.

With Replies From The Best Dental Authorities.

[Address all Questions for this Department to Dr. Harry Beers Hickman, No. 719 N. 17th Street, Philadelphia, Pa.]

Question 4. *A girl twelve years old with upper incisors projecting. The lower incisors articulate with the palato gingival surface of corresponding teeth in upper jaw. The cuspids have erupted. Otherwise the articulation is good. What is the best means of reducing the irregularity?*

Make small plate for lower jaw, jacketing the bicuspid, so as to keep the teeth slightly apart, and then allow the first and second molars to elongate in their sockets. Six months will generally suffice, sometimes less. When the molars occlude so as to cause a space of a sixteenth of an inch or even an eighth, between the incisive edge of the lower centrals and the palato gingival surfaces of the upper anterior teeth, another plate, with bicuspid jacketed, should be constructed with little prominent places left in a position corresponding to the buccal surface of first bicuspid on either side of plate. With a Clapp saw make a slit in each of these prominences. Now take a piece of a narrow rubber band, about as long as the plate is wide, and tie a knot in each end and slip rubber through slits in prominences on each side. The knots prevent slipping. After articulating the plate as comfortably as possible, cut away freely back of incisors to prevent bunching and soreness of gums. The object of the rubber band is for sure and steady retraction of the anterior teeth. The tension can be regulated at will by lengthening or shortening the rubber strip. *W. T. Tracy, D.D.S., New York City.*

I would strike up a plate of gold to cover the upper incisors and cuspids, if sufficiently erupted. Make a pronounced ridge on the palatine surface so that the lower incisors will make a fine occlusion on the plate or the ridge, then cement the plate in place on the upper teeth. This will bring all the force of the bite on the front teeth, leaving the bicuspid and molars some distance apart. In from one to two months the molars will have elongated to an articulation, and on removing the plate there will be space between the upper and lower incisors. Then the upper centrals can be forced into position by means of the angle appliances or some modification of it.

Howard E. Roberts, D.D.S., Philadelphia.

I do not think any intelligent answer can be given to any case of irregularity without the models being present. In such a case as this, even the models would be insufficient as it would be necessary to see the patient herself or at least a plaster cast of the face.

M. L. Rhein, D.D.S., New York City.

Question 5. *What is your method of bleaching?*

There are two ways in which I bleach teeth, viz.: with cataphoresis and without. I will give method without cataphoresis. Place dam over tooth and remove all fillings. Having the root thoroughly treated and well filled about one-third down from the apex with gutta-percha, wipe out the cavity and root canal with 50 per cent. sulphuric acid. Leave the acid in about one minute, then neutralize with soda bicarbonate and wash out with water and dry with alcohol and hot air. Pack the root and cavity, not tightly, with cotton wet with 25 per cent. pyrozone, and seal it in with soft white gutta-percha stopping. This may stay in for a day or a month. Repeat the application of pyrozone in the root as often as may be necessary to bring the tooth up to color. The sulphuric acid is used with the first treatment only. When bleached fill the cavity and root with light colored cement mixed thin and put in under pressure. I have had very satisfactory results from this method with old brown or yellowish brown teeth.

Dr. H. E. Roberts.

Cleanse the pulp canal thoroughly. This must be done only with the rubber-dam adjusted and under the strictest aseptic principles. The apex is then sealed hermetically. The bleaching is done by means of H_2O_2 .

Dr. M. L. Rhein.

For slight recent discolorations 3 per cent. pyrozone and hot air blasts. For a more marked discoloration 25 per cent. etherial solution of pyrozone and hot air blast, say for a half hour at the first sitting; then close the cavity with temporary stopping and dismiss patient for twenty-four or forty-eight hours. If then the bleaching has not improved enough, repeat the treatment, and seal with a pledget of cotton saturated with pyrozone. If the stain be of a yellowish cast a small crystal or oxalic acid, placed in the cavity with the pyrozone, will facilitate the process greatly.

Dr. W. D. Tracy.

Question 6. *Do you meet with an occasional abscess on a vital tooth? Please give cause and treatment.*

Yes. I would say that the most important point is the immediate removal of the pulp.

Dr. Rhein.

Yes. I open it and wipe out the cavity with pyrozone, sometimes 5 per cent., others 25 per cent.; generally good results.

Dr. Roberts.

Yes. Two such cases have been recently under my care. I can not give the cause of these abscesses; but I have felt that they must be caused by deposit of serumnal calculus on the side of the root, or possibly to some kind of stoppage in the capillary circulation of the peridental membrane. Treatment is the same as in any abscess. Open gum freely. Wash out with warm water, and follow with 3 per cent. pyrozone. Keep tract open for twenty-four hours by a dressing of cotton containing a small amount of creosote. Repeat the treatment the second day and remove any roughness on the root. When free from pain allow to heal.

Dr. Tracy.

Question 7. *What do you consider the best pulp capping?*

Difficult to answer. Frequently arsenic left in for twenty-four or forty-eight hours will give most satisfactory results. Oxide of zinc and oil of cinnamon covered with a metal or gutta-percha disk gives good results, then flowing thin cement into the cavity without pressure.

Dr. Roberts.

I do not practice capping exposed pulps as a rule, but occasionally a favorable case presents. I then fill a small concave cup of platinum with a thick creamy mixture of oxide of zinc, iodoform and creosote and place it carefully over the exposure, filling over that with cement mixed to the consistency of soft putty.

Dr. Tracy.

The following was published in October BRIEF:

PULASKI, Va., August 25th, 1898.

DR. T. B. WELCH, Philadelphia, Pa.

Dear Sir:—I have a patient, a girl about fifteen years old, in whose mouth I have put several amalgam fillings, and under each I put a coating of gutta-percha, also on upper central, which I destroyed the pulp of, and filled the root with gutta-percha, and the crown cavity with gold.

I supposed that the teeth would remain comfortable, but on the contrary they are just as sensitive as ever, and have been ever since they were filled, three months ago.

None of the cavities were large, and none were near the nerve.

Not only are the filled teeth sensitive, but the teeth which are perfect in every respect are just as sensitive.

I confess I don't know what to do, so I write you in the

hope that you will be able to throw some light on the situation through the columns of your delightful little monthly visitor, the DENTAL BRIEF. *J. H. Wool, D.D.S.*

Who will give light?—ED. BRIEF.

We have these replies:

Before suggesting any treatment, I must have temperament and systemic condition of patient. The insertion of alloy and gold fillings might be one of the causes. I would remove the alloy and fill with cement or gold. The Doctor says **nothing** of the condition of the cervices of the teeth. There may be erosion or slight recession of gums. If he will diagnose his case thoroughly, we may be able to help him.

C. Stanley Smith, D.D.S.

The teeth of children up to the age of fifteen are usually supersensitive, and in the use of amalgam precaution must be taken. Do not thoroughly remove decay directly over the pulp. Have the cavity dry by hot air, then apply creosote and dry again. Use Canada Balsam cut in chloroform as a lining in the cavity, as this will seal the dental tubes. Use a thin gutta-percha disk in the cavity if near the pulp. Do not have your amalgam very hard, and carry the pressure toward the sides of the cavity by the use of bibulous paper on the end of a small plugger.

For the sensitive teeth that are not filled, I advise the use of prepared chalk, rubbed between the teeth at bed-time and allowed to remain during the night. It is used as an antacid for the acidity of the oral fluids. I have found great satisfaction after three or four nights' use. For the filled teeth I would prescribe "Dr. Wells' Periosteal Tablets," found at dental depots.

Bertram A. Moyer, D.D.S.

TAKING DIFFICULT IMPRESSIONS.—Take a soft piece of modeling compound, place that in the dovetailed space, the shape of the space between the converging teeth, making in the mouth a core of modeling compound; before that has got hard, or perhaps after it is hard, it can be pushed up laterally over this dovetailed space, and then the sides trimmed so that it slips from the crown of the tooth toward the gum; these little chunks of modeling compound then are placed back in the dovetailed spaces and a plaster of Paris impression taken afterward. This comes out of the mouth, leaving the modeling-compound cores in the dovetailed spaces. These can be pushed out laterally, put in the plaster of Paris impression, and the model made over that.

Dr. Goddard.

CURRENT THOUGHTS.

PYORRHEA.

Dr. G. T. Carpenter, Chicago.

In diagnosing, get a history of it and decide on the predisposing cause, or cause outside the pocket, which is generally from local irritation caused by wooden toothpicks, ligatures, wedging of teeth, ill-fitting plates or crowns, accompanied with neglect of the mouth. These or other causes should be removed and any systemic predisposition should be corrected, and then we should secure the hearty coöperation of the patient. The disease once established is self-sustaining, and it is within the pocket that we must look for, find and remove the exciting cause, which may be serumal deposits, pus-secreting membrane, foreign substances, or diseased or necrosed margins of process. To make a careful and thorough examination of the pockets I secure dryness with bibulous paper, protect the parts with a napkin, and coat the surrounding gum with cosmoline to protect the parts outside of the pocket from the action of medicines. Now dry the pocket and pack with cotton, slightly moistened with four to eight per cent. aqueous solution of cocaine. After allowing this to remain several minutes, carefully remove the cotton. The pocket will remain open, so that an examination can be made with a mouth-mirror. Deposits, if present, can be located before instruments are used for their removal. I operate on but one tooth at a time, or on the interproximal space between two teeth, doing all that I intend to do in that immediate locality before directing my attention to other teeth. All loose teeth having lost two-thirds or more of their natural support are extracted. The best instruments to use in the pockets are spoon-shaped excavators, with the shanks bent so as to reach every part of the root or pocket. They must be kept sharp, so that deposits can be easily removed and the root curetted. The soft parts and margin of process can also be curetted if necessary. The pocket should be cleansed with equal parts of peroxide of hydrogen and pasteurine, or three per cent. pyrozone and borolyptol, using a flat-pointed syringe which should pass to the bottom of the pocket. This will not only antiseptically cleanse, but mechanically carry out all free and loosened particles. The gums are now wiped dry and painted

with a tincture of iodine, which should be repeated about twice a week.

The tooth, if loose, is supported by bands or ligatures, and if moved by occlusion I grind the tooth or its antagonist sufficiently to prevent all movement, so as to procure rest for the affected parts. All subsequent treatment of the pocket should be a thinly-shaved, hard-wood toothpick, which can be moistened in the antiseptic and bent so as to reach any location. This is passed into the pocket as deeply as possible without injury to the tissue or causing pain or hemorrhage, and the application repeated once or twice a week as long as the toothpick can gain entrance to the pocket. It is seldom necessary to make incisions through the gums into the pockets, and I but seldom resort to the use of dilute or stronger acids as an aid in softening or removing deposits or to establish resolution.

Antiseptic and prophylactic conditions should be established and followed during treatment, and indefinitely continued throughout life. I recommend a thorough rinsing of the mouth and the use of an antiseptic after each meal. I also recommend a medium stiff tooth-brush to be carefully used at night before retiring. This time, once established, will not be substituted for other hours in the day. The brush will have time to dry and for the elasticity of the bristles to be restored, which will do the best work at the most needed time. A good dentifrice with the base precipitated chalk should be used on the brush, after which one dram of pasteurine or borolyptol should be taken into the mouth and retained for from three to five minutes, at the same time moving the cheeks and lips so as to force it between the teeth and reach all parts of the mouth; then expectorate and retire without rinsing the mouth with water.

The time spent in the successful treatment of this disease depends on systemic conditions and the extent of the disease, or the thoroughness with which the first operation is performed. The recurrence of the disease comes from a failure to remove the predisposing causes. The reproduction of gum-tissue in all interproximal spaces is essential to prevent the lodgment of food or injudicious use of the toothpick. I believe that a thorough removal of the cause, with antiseptic treatment and stimulation of the gum-tissue, will cure the most persistent alveolar pyorrhea.

Its recurrence is caused as frequently by the patient's neglect and riotous living as by the fault or want of thoroughness in the treatment.

RESTATEMENT OF THE TOOTH-BLEACHING PROBLEM.

An Abstract.

Dr. Edward C. Kirk, Philadelphia.

From a general survey of existing ideas on the question of tooth bleaching, we cannot avoid the inference that our practice is almost wholly empirical. Practitioners concern themselves principally with methods of procedure and the detail of minutiae which go to make up a given bleaching process, rather than with the scientific reasons why the process is applicable, or from a rational understanding of the conditions to be met. Hence it is that we hear more of the relative merits of given processes for tooth bleaching than we do of the principles which govern their successful use. But the best and most uniformly successful results in this, as in any line of treatment, can never be attained through the empirical study of clinical phenomena alone; a clear understanding of the underlying principles involved is essential to a rational use of methods based on them, and is necessary to their successful application.

It is true that our knowledge of the principles underlying tooth-bleaching processes, as well as of the conditions to be met, is meagre and imperfect, and still needs thorough investigation. Yet there is enough to serve as the basis of study, and it is with the hope that I may be able to give direction to your thought in this matter that I have chosen this topic for consideration.

It is at once evident that we are confronted with a chemical problem, for in the successful application of a tooth-bleaching agent we have wrought an important change in the matter causing the discoloration, so that it has lost its color quality and become white. Any change which affects the composition of matter so that its identity as such is destroyed is a chemical change.

Our problem then is chemical reaction between a so-called bleaching agent and the coloring matter lodged within the dentinal tubules which shall so alter the composition of the latter as to render it colorless. A bleaching agent is any agent capable of effecting that result.

We may next consider the nature of the coloring matter, and afterward the means by which its color factor is destroyed.

Tooth-discoloration may arise from many causes, but for our purpose we will consider only the most common one—viz., that following death of the pulp and in which the source of discoloration is the hemoglobin of the blood. Hemoglobin is a complex

proteid compound contained in the red blood-corpuscles. Traumatic causes, intense and sudden congestion of the pulp due to irritants, especially of arsenious acid or strangulation of the pulp, may cause a rupture of the stroma of the corpuscles, liberating their contained hemoglobin and its diffusion into the tubular structure of the dentine. The result is that the tooth becomes pink.

The difference in appearance between blood containing unruptured corpuscles and that in which the hemoglobin has been liberated is quite marked. One contains simply defibrinated blood, the other defibrinated blood which has been agitated with a small amount of ether. The latter, when viewed even in thin layers by transmitted light, presents the appearance of a homogeneous solution of hemoglobin in serum, while the former, in thin strata, presents the characteristic cloudy, granular appearance due to the presence of the unbroken corpuscles.

We may now test the reaction of our hemoglobin solution with hydrogen dioxide by staining a sheet of white blotting-paper with the hemoglobin and then applying the dioxide, and, as you see, the color is rapidly discharged, from which we infer correctly that in the very first stage of tooth discoloration—viz., the pink stage—the color is readily discharged by pyrozone.

The pink stage, however, rapidly passes and gives place to a brown discoloration, or at least some modification of a brown tint, varying in intensity with the amount of hemoglobin originally present. The change from the pink to the brown tint is due to a chemical alteration in the hemoglobin, which consists of its splitting up into hematin and globulin. This change takes place with variable rapidly and spontaneously within the tooth-structure. We can bring about the same result experimentally by the application of any acid to the hemoglobin stain on our blotting-paper, and by touching the stain with dilute hydrochloric acid you see the bright red color is instantly changed into brown. Upon making an application of pyrozone as before, we find that the brown stain remains unaffected, and we infer that the brown stage of tooth-discoloration is relatively more resistant of bleaching by pyrozone than is the pink, an inference supported by clinical observation. The tooth under ordinary circumstances passes through color changes beyond the brown stage into a bluish or gray or nearly black color, and these changes in color are due to the progressive breaking down of the hemoglobin until the compound is reduced to its lowest terms. The final black or dark color is permanent, and is due to the formation of an unal-

terable compound of iron probably with sulphur, the iron being one of the original constituents of the hemoglobin and the element to which its various color manifestations are due. The sulphur which enters into the formation of the permanent final stain is derived from the protoplasmic element of the cellular structures of the pulp.

The resistance of the brown discoloration of hematin to pyrozone and other bleaching agents in variable degree renders the restoration of teeth so discolored often quite difficult. I have found, however, that the brown discoloration may be successfully removed by the prolonged action of either sodium or hydrogen dioxide, followed by an application of strong oxalic acid. The rationale of the process is based on, first, the existence of iron as a constituent of hematin, and the formation of a soluble and practically colorless salt of iron with oxalic acid.

The permanence of the bleaching process is directly related to the existence of iron as an element in the original coloring matter of the tooth, and which must either be finally gotten rid of or else so fixed that it cannot form new and colored compounds, if a permanent result is to be hoped for.

That iron is one of the elements of the hemoglobin stain is easily demonstrated, and that it is not removed by pyrozone, but simply changed into a colorless combination, will be seen by applying the usual reagents for the detection of iron to the bleached stain, and there are at once shown the characteristic reactions of iron to potassium sulpho-cyanide, potassium ferro-cyanide and to ammonium sulphide. Teeth in the early stages of discoloration and which contain coagulable matter in the tubuli, should be treated to an application of strong zinc chloride immediately after the bleaching by pyrozone, in order to coagulate and fix the white compound unalterably, or, what is better, should be treated with a strong alkali—*e. g.*, sodium dioxide or Schreier's preparation—with a view to dissolving and eliminating the contained organic matter, aided by a thorough irrigation by hot distilled water. Where coagulable matter is not present, resort must be had to a resinous solution, applied to the desiccated tooth until the dentine is saturated as fully as possible.

Cosmos.

[There are many agents and processes that will bleach a tooth, but we must choose only such as will not injure its substance. We must also take into consideration the duration and character of the stain, and the age and condition of the patient.—ED. BRIEF.]

THE INTRODUCTION OF GOLD IN LARGE CAVITIES.

Dr. Edward A. Royce, Chicago, Ill.

Several years ago, while discussing a paper read by me before this society, the remark was made: "If some way could be found to relieve the dentist of the great physical strain attendant upon the insertion of large gold fillings, it would be fully appreciated by the profession." This suggestion stimulated me to work out the practical application of certain ideas which I had entertained for years—first, that of procuring a mallet with an easily controlled, rapid positive blow; second, proper forms of plugger points, and the easiest and most effective manner of using them.

From the different mallets which I have used, I selected for alteration the Bonwill Mechanical No. 2 as the one capable of giving the most positive and rapid blow, but which required so much manual dexterity in its manipulation that it is not as extensively used by the profession at large as it merits, so the first thing considered was the simplification of this instrument so that the man with ordinary skill could use it. The principal difficulty seemed to be that in attempting to control the instrument by the finger or thumb through the opening in the side of the mallet, the free movement of the plugger point was prevented. To avoid this the finger ring and small projection at the side of the brass tube were removed and the opening in the side of the rubber tube was closed. By this arrangement the control of the point was lost, and to regain this the sides of the instrument were shaped so that the retaining springs held the point from turning in the tube, and when necessary to turn the instrument, the tube was rotated in the hand. The screws holding the small springs which retain the instrument in the mallet were replaced by others with slightly larger heads.

Another portion of the mallet which received my attention was the plunger which conveys the blow to the instrument. This plunger is of steel, and to give a dead blow a piece of wood is set into the end that comes in contact with the instrument. This is all right in theory, but so far I have failed to find wood hard enough to stand the work I demand of a mallet without battering down so as to spoil the adjustment. Therefore, to make this part more durable, I cut the wood off even with the steel, and cut off the shaft of a large wheel bur to one-fourth of an inch, and set the bur in the wood, grinding the head to the proper adjustment. I now had a mallet whose action and instrument I could easily

control, and I find that a mallet thus constructed and properly adjusted, with the instrument nicely fitted so as to take the full impetus each time is extremely easy to manipulate, and will give as rapid, positive blow as any mallet in the world. If at any time greater speed is required than can be obtained from the engine, an extra lug can be put in the wheel which delivers the blows, thereby giving two blows for each revolution of the engine. This makes the mallet more practical for the foot engine. The limit of speed is controlled by the rapidity with which the springs throw the instrument back against the plunger; as high as 12,000 blows a minute have been obtained, but probably 8,000 blows are more practical.

The principal advantage I get from a rapid mallet is the great saving of time by wiping the gold to its place, and this can be done in two ways, both of which require the same points. The first requires a slow speed of from 700 to 1,200 blows, with slight pressure upon the instrument. The second requires a speed of 3,000 to 8,000 blows, and the instrument is carried just clear of the filling, allowing the point as it is projected by each blow to strike the surface and thus condense the gold. When the conditions are favorable, this method is much more rapid than the other, but with either of these methods you can sweep the instrument over the gold in the same manner, and as rapidly as you can seal an envelope with a single sweep of your thumb; but to do this your plunger points must be the right shape and have the right kind of serrations.

At first I used in the rapid mallet flat, serrated points, but found them unsatisfactory for general use because of their liability to catch the gold, dent the fillings, and the constant care required to keep the face of the point parallel with the surface of the gold. In the oval serrated points the difficulties were less marked, but not entirely removed. The smooth points are ideal for wiping gold, and there are some operators skilful enough to always strike the fine line between thorough condensation and burnishing—just as there are operators who can successfully use the most complicated mallets—but unfortunately they are the few, so it was necessary for me to find something new which would combine the good qualities of all these points without their disadvantages. I am thoroughly impressed with the fact that physical law controls completely and absolutely the action of gold under the plugger point. This being so, I have been able to construct points which I believe will meet the requirements of the profession at large. These points have oval faces and sides, and all

sides are serrated in a manner as to leave the surface in the proper condition to receive the next piece of gold, and still the serrations offer the least possible resistance to the movement of the plugger over the gold, thus enabling one to rapidly wipe the gold into its place. For years the introduction of gold was, to me, the most difficult and trying part of the insertion of large gold fillings, but with the appliances, which I have tried to describe at hand, the operation is so easy and the time consumed so shortened, that the physical strain of gold work has been greatly reduced. Of course, impossibilities cannot be performed, and care must be taken to fill all inaccessible portions of the cavities with this, just as with any other method of condensing gold; but with the force that can be obtained from the mallet, properly delivered, the gold can be worked at the will of the operator. The sides of the filling should be carried up ahead of the center and the gold wiped from the center toward the sides, and when the margins (which should be nicely beveled) are reached the gold can be carried over them in much the same manner that the cook carries the crust over the edge of the pie-plate, and almost as easily.

It is, as you know, quite impossible to convey any adequate knowledge of an operation by description; but if any of you will investigate this method of filling large cavities with gold, you will find that, while the operation is so simplified as to appear to the casual observer like a reckless or careless operation, it is in reality thoroughly scientific and based on positive laws. *Review.*

FILLING AT THE CERVICAL BORDER.

Dr. Stafford G. Perry, New York.

What material shall we use at the cervical border, if we have decided to put an oxyphosphate filling on an approximate surface? It depends on the teeth. If in the front teeth, it should be gutta-percha or gold. If in the bicuspid or molars, it should be gutta-percha, amalgam or gold. I do not include tin, as that will be mentioned later.

The need of any indestructible substance is not so great in the front teeth as in the bicuspid and molars. Any one of considerable experience will understand this. The teeth are not so broad and the cervical border not so sheltered, and the conditions, taken all together, are not so treacherous. Gutta-percha is quickly applied to all these cervical borders, and has the great

advantage of being safe. Though, of course, in a few years, after expanding and bulging out so that it must be trimmed off, it will finally rot and have to be renewed. It is a very safe substance to use, however, as any bulging and rotting will be detected, owing to the fact that the oxyphosphate placed on it will wear away and have to be renewed in two or three years at the latest, and at each renewal the exact condition of the cervical border can easily be ascertained.

This combination for very badly decayed teeth, particularly bicuspsids, becomes in my judgment a very wise one to adopt. There will be generally two or three renewals of the oxyphosphate to one of gutta-percha. Teeth treated in this way may not increase one's reputation, because when the oxyphosphate wears away patients will come saying the filling is out, but the operator can hear this undisturbed, because he knows at the cervical border it is safe and sound.

Of all the substances that can be used at this border in badly decayed teeth that must be treated with plastic, I believe gutta-percha the safest. I will not say that I think it in all respects the nicest, for the bulging or the rotting will be noticed by careful patients who have the habit of passing the silk; but for absolute safety I think it is unsurpassed by any other substance, and for the reason that with it such a perfect adaptation can be made to the walls of the tooth, and because it has the preservative quality.

For many years I have in many of these cavities protected the gutta-percha from wear by covering it with amalgam instead of oxyphosphate, filled the cavities nearly full of gutta-percha, and then covered them on the grinding surface only with a rather thin filling of amalgam. I have known such fillings to last many years, but there is one danger—that of the expansion of the gutta-percha causing the thin walls of the tooth to split off. This danger is not so great, however, if the amalgam is only used on the grinding surface, and the gutta-percha is left free on the whole approximal surface.

Gold can be used along this border to great advantage in many teeth so badly decayed that it could not wisely be used for the complete filling. The de Trey* and similar forms of gold are very well suited for this purpose, as they can be so easily and accurately applied, as before stated. Amalgam for this purpose in many cases becomes invaluable. I have used it with a constantly growing confidence in its value.

* I hear this spoken of highly.—ED. BRIEF.

Of course you will understand that I am speaking of these three substances — gutta-percha, gold and amalgam — only as foundations at the cervical border for oxyphosphate. This is no place for the discussion of the relative value of filling materials, only as applied to the cervical border. I have not included tin, for while in some places I consider it the most perfect of all filling materials, I do not trust it in sheltered places on approximate surfaces, and for the reason, of course, that it undergoes chemical dissolution. For this reason, many years ago, when it was advocated as well suited, pure or rolled with an alternate leaf of gold, for use along the cervical border, I distrusted it and used it but little. The few teeth that I ever filled in that way were afterwards repaired by replacing the softened tin by either gold or amalgam. If tin can be packed near the edge of the enamel, and gold placed over it so that no tin is left exposed when the filling is finished, a durable filling may be expected. This is now done by Dr. Shumway, who finds that gold adheres to tin when rubbed onto it with ivory points. He rolls the tin in a compact roll, and, cutting it in short pieces, anneals it over mica nearly to its melting point, and, after packing in the cavity, he burnishes the surface with an ivory point and then rubs cohesive gold onto it. He claims the union between the metals is sufficient to make a fine filling, the tin being protected from wear or disintegration by the veneering of gold. To be successful, he says, the tin must be annealed and the filling protected by the rubber-dam from even the breath.

International.

PYORRHEA.

Prof. J. Taft.

There are many variations in pyorrhea; there is usually a pocket which is an opening between the tooth and surrounding tissue, from which there is a flow of pus sometimes very offensive, at other times not. The pus sometimes is very poisonous to surrounding tissue, sometimes not. There is usually considerable deposit on the teeth, sometimes little or none. All these various conditions must be known, and yet a much wider knowledge is needed to treat intelligently. The habit of the system as to yielding to or resisting disease, and the predisposition to certain diseases, should be learned, and the susceptibility of the patient to the action of remedies. All of this knowledge is necessary to a correct diagnosis, and to this should, if possible, be added a knowledge of the parents and grandparents.

Who goes on without all this knowledge will often find that failure will attend his treatment. We often hear the treatment of pyorrhea discussed as though the disease was simply local. Systemic treatment based upon a thorough knowledge of the principles that govern disease, and a particular knowledge of the individual, are essential.

When the history of a case has been learned, then the next thing is to determine how to remedy the conditions. There are two general lines of treatment, the surgical and the medical. The surgical treatment consists in the thorough removal of all deposits about the teeth. This must be done with instruments so designed that they will easily reach every part of the root of the tooth to be operated on. Further surgical treatment is to remove any necrotic tissue from the lining of the sockets of the teeth. This will take away any half-dead tissue, invite a flow of fresh blood to the part, and remove the sluggish blood and provide a stimulus, which will cause healthy granulation to begin. The flow of pus indicates various conditions, according to the quality of the pus, but always the removal of all dead or half-dead tissue is indicated.

The use of hot water to wash out the pocket has been spoken of. This will loosen up and remove any *débris* there, and also will sometimes detach the dead tissue. It may do this to such an extent as to free the locality of such matter, and thus allow the closing up of the pocket. If used with an antiseptic material it should give good results. When we introduce any treatment we should know why we do a thing, and what result we can reasonably expect. Therapeutic treatment is advisable; escharotics may be used to separate the dead parts from the living so reparation may be brought about. I have been using the lactate of silver with some satisfaction,—its good results are from its antiseptic qualities,—but I have not used it long enough to be sure that it would accomplish the desired result better than other preparations. Carbolic acid is used largely, and in nine cases out of ten by those who have no conception whatever of how it will act. Tonic treatment of the system is often necessary; for it will be found far more difficult to treat these cases while the patient is in a low state of vitality.

The popular notion that mosquitoes are chiefly resident in tropical and sub-tropical countries is quite a mistake, the home of their mightiest legions being within and about the Arctic circle.

AMALGAM.

C. P. Pruyn, M.D., D.D.S., Chicago, Ill.

This old subject of amalgam is ever new, for where an ounce of gold is used for filling teeth a pound of amalgam is used; and when we think of the anathemas that have been hurled at amalgam per se, it makes us feel that these curses had better have been heaped upon the heads of the careless operators rather than upon the material itself. Thoroughness and carefulness in the proper preparation of a cavity for this material and its thorough insertion is of such vast importance that it cannot be too thoroughly emphasized. It is very unfortunate that so many of our practitioners have the idea that the public think amalgam to be a cheap material, and that they cannot make a sufficient charge for the amount of time consumed in putting in a good filling. This is one of the main causes of such poor amalgam work being done. I think the proper method is to disabuse the mind of our patient of the erroneous fact that amalgam is a cheap material. If my patients ask what my prices are for amalgam fillings, I tell them that I put no prices on the amalgam; that I make no charge for the amalgam I put in the tooth, neither for the gold I put in the tooth, but that as a professional man I charge for my knowledge and skill and ability in rendering my patient a service.

I fill the distal surfaces of badly decayed molars and bicuspid with amalgam, often extending to the occlusal surfaces, and filling the mesial and part of the occlusal with gold, having the two metals in complete apposition in the same tooth. Indeed, these two metals should never be used in a tooth without coming in complete contact. By being in complete contact the affinities of each are satisfied and short circuiting results with an oxidation of the baser metal, and a clean bright surface left to the gold, and as a result a peculiar condition results with the amalgam filling. It may be that the oxidation fills in the crevices about the edges of the amalgam filling, making closer joints, or it may be that a peculiar electrical condition prevails which prevents the growth of bacteria and consequent decay. I frequently see some of my patients in whose mouths I have placed this combination twenty years ago, and the work still holding to-day very satisfactorily, and I am satisfied that it is doing better work than either gold or amalgam would have done if they had been placed separately.

In the preparation of cavities for amalgam there should be

no beveled edges left, as we know that amalgam will not retain an attenuated edge, as it will crush under the force of mastication. So there should be broad, straight borders.

The present craze for gold crowns is often carried to the extent of crowning teeth that could be much better saved for years of usefulness with well inserted amalgam fillings. I am satisfied that extensive decay in molars and bicuspidis could be better filled with the use of a continuous band matrix, which should be retained in position for several hours until the amalgam has thoroughly set, and then split off with a knife, for such fillings are frequently injured before the patient leaves the office, perhaps by the careless removal of the rubber-dam or hand matrix, or by the opposing cusps of teeth before the amalgam hardens. We know from experience that amalgam does its best work at the cervical borders; we know also that gold does its best work on the occlusal surfaces. Now, by using these two materials, each in its own place, where it can exert its greatest field of usefulness, we can combine the two materials and thus preserve frail teeth much better than by using either one alone.

Review.

KEEP THINKING.

Austin Bierbower.

Mr. Armour, the great packer and chief feeder of the world, used to say to his employés who asked how to get on in the world, "Keep thinking." The import of this answer is far-reaching. In all departments of life he does most who thinks most. The force which achieves is mind; since whatever gets out in action is first in thought. The head is the place of beginnings, where things originate, and when that moves many things go, whereas if a limb moves that alone may go. When one thinks, most of the man is working, and the work then done counts most. Thinkers have a long progeny of effects, which never become extinct.

Things must be started before they can go; and, as everything begins in conception, one working at the startings has the place of power. Thinkers produce the seeds of enterprise, and so most determine events.

Men need those who first conceive; for one can create what it will take a hundred to execute. A whole world stands ready to take up what is well projected. The demand for inventors is greater than for followers, and what one can devise measures him. After centuries of thinking, it takes genius to find anything

not yet thought of. The thinker is hunter of the undiscovered, which is rare in a much-traversed world.

But inventors must be such by habit. One cannot discover who is not exploring. Thoughts must be kept up to be ready; so that he thinks to no purpose who thinks seldom. Mind must attempt often to hit once. Efficient men reflect, which is but "thinking again" and digesting, and it is second thoughts which count. An enterprise requires more thoughts than one, both to begin and to complete it; and a man must habitually think, to think often enough to think at the right time.

Yesterday's thought will not serve for to-day. Thoughts begun should provide force to go on. Nothing good proceeds of itself; and he only can keep it up who starts it. A second man's thought rarely supplements the first man's. Each must do his own thinking to profit by it. Enterprises must be followed with thoughts as well as blows, and the successful are they who have enough thought to go to the end of a venture.

The chief question of the great man is, "What next?" He is always about to do. When either beginning or ending, his interest is in the sequel. He asks, "What is next to do to go on?" and, "What is next to do to begin something else?" The attained cannot long interest one without loss. He must follow up achievement, piling success on success. One ceases to do much when he fails to do more.

Especially should one keep thinking till he has something worth thinking at. The main thought is at the beginning of an enterprise, where all is yet thought, and one selects from the possible what will be.

Thought should determine in advance the mark and the aim. Man should not shoot himself off till he is ready, and then look before firing. The hit will be no better than the aim. Random beginning is as bad as random proceeding. One attains nothing unless he goes for something, since values rarely lie in the way of chance.

One always gets something who thinks. Thoughts cannot fly around indefinitely without hitting somewhere. There are too many things for very many misses, and enterprises lie in the way of all thinking. Of the many things that may be, few have been; and, since the possible things are more than the actual, the supply is exhaustless from which to choose what one wants for fact. The thinker lives in the unrealized, with unborn enterprises as his materials of thought; and he determines from these his future.

Opportunities come fast to those who hunt them. There is

something better for all who have not what they want; and none need despair of chances who will take them. But they must be found before they are seized, and picked out of many things; for everything wanted lies in a greater mass that is not wanted.

One should try to think what he never thought before, and what none ever thought. What is open to everybody's thinking has long since been picked up. The valuable lies in the way of rare thought, which the many do not enter. If one's mind goes where none have been, it will find what none have found.

Thinking makes one able to think, and he soon thinks spontaneously. Thought is cumulative, like effort; and the habitual thinker is an easy one. He thinks as his way of living, and is as many times a man as he multiplies his power of thought.

Especially must one think who would act; for action is the object of thought. One cannot think who thinks only. Thought that ends with itself is a kind of sloth. The best thinking connects with the will. Thought naturally ends in action, as well as begins there; for we originate to complete, and a thought entire goes from conception to performance.

We must think to get a good thought, think to complete it, and think to actualize it. When a thought is conceived and matured, it should be born. There should be no abortions in thinking. There is creative thought, perfecting thought, and executing thought; or things begun, idealized, and actualized. We should not only originate, but make a beauty of what we conceive, and then make it permanent in fact.

To get the best we must know the whole. Judgment is choice, and elects from many possibilities. There must be much thinking for the best thinking, and especially the best choice. No wisdom is in little thought; but good thought is much thought. Selections of thoughts are as necessary as of purposes; and our minds must be guided as well as our hands. The thinker lives in the possible worlds, and chooses from many alternatives coming events—success.

"The greater part of the courage that is needed in the world is not of a heroic kind. Courage may be displayed in every-day life as well as on historic fields of action. The common need is for courage to be honest, courage to resist temptation, courage to speak the truth, courage to be what we really are, and not to pretend to be what we are not, courage to live honestly within our means, and not dishonestly upon the means of others."

Success.

HOW TO TAKE A PARTIAL IMPRESSION WHEN THE TEETH CONVERGE OR DIVERGE.

F. W. Bliss, D.D.S., Santa Cruz, Cal.

First take an impression in wax and make a model from it. Then soften and mold pieces of Ideal base-plate material on the alveolar ridge of the model between the converging teeth, and use them for impression trays. Place on them plaster of Paris, and put them in the mouth in their respective positions, and after the plaster has hardened, and before removing, take another impression in modeling compound. Now remove the modeling compound first, and then the base-plate impression; they will come from the mouth separately. Place them together so that they will sustain the same relation that they had in the mouth. Make a model from this combination, and it will be as perfect a representation of the parts as will be required.

Pacific Gazette.

INCIPIENT PYORRHEA.—There is a prevalence of diseased gums in this country to-day that is inexcusable in the light of demonstrated knowledge on the subject. Given an average case of turgid swollen gums, purplish in color and exuding pus on pressure, with evidence of a line of deposit under the free margin of the gum, but with little loosening of the teeth and no very deep pockets, and such cases are largely amenable to treatment.

It is claimed that this cannot strictly be called pyorrhea, then the counterclaim is made that it is often these very cases which are neglected and pronounced incurable by dentists.

Dentists have failed to arise to the requirements of the case more in the management of pyorrhea than in any other line of work, and it is surely time that they began to demonstrate the fact that they have the best interests of the patients at heart in this as in other affections. If failures occur it should not deter them from doing the best they can with the next cases which apply. Failures often occur in fillings and in artificial dentures, and if these were allowed to discourage dentists against other attempts in the same class of work the profession would soon appear helpless.

It is saying very little for us as a profession to acknowledge ourselves beaten to a standstill by a disease so long under observation, and so generally prevalent as pyorrhea.

Dental Century.

A GREEN OLD AGE.

Mr. Gladstone, who died a few days ago full of years and honors, and with the thoughts of the whole civilized world centered on him, was, at the time of his death, in his eighty-ninth year. A man of good physique and of exceptional vigor, he nevertheless in his time worked hard, and burned the midnight oil. Night after night for very many years he spent hours in the House of Commons, leaving it in the small hours of the morning, to snatch a short rest, and to begin again at his labors in the early morning. At the zenith of his power he was essentially a hard-worked man, and yet he attained the age of eighty-eight. So, after all, hard work does not necessarily tell on longevity. Hard work does not kill—it is, as we have frequently pointed out in these columns, excess in eating and drinking, and in all things connected with our every-day life, that tells. To be temperate in all things should be the golden rule of life, not to err in any particular in the direction of excess. Exercise a strict attention to diet, a sufficiency of sleep, and a strict adherence to all hygienic rules, will make all the difference between a short-lived and a long-lived man.

Family Doctor.

PREPARING FILLINGS.

Dr. C. N. Johnson, Chicago.

Every time we put in a narrow filling on an approximal surface, we must have in our minds the possibility that we will have a failure there sooner or later. It may be advisable in many instances to do this temporary work; in fact, we are called upon to do it at times, because of the conditions that may be present. A patient may be in a nervous condition that will not permit us to extend these cavities to the full extent that we believe to be necessary for the most permanent work. But we must also bear in mind, as I said before, whenever we are compelled to put in a narrow filling without extension, that we are doing work that in the ordinary course of events will be variably temporary; and such work must be watched. Wherever we can do so, if the conditions are at all favorable, we should extend these cavities to permanent lines, so as to do the most permanent work in the first operation.

Now, an instance to show the distinction between the concave seat and the flat seat. The tooth was a bicuspid, and I had

made the flat seat and started the filling with gold. A gentleman came along and said, "What do you do now if that begins to rock?" My answer to him was that "It will not begin to rock." I want to say that the time of rocking fillings has passed in my practice. Having the seat flat, you start the filling in one angle and carry it across to the other, and lock it between the buccal and lingual walls. It may require slight retention with an instrument in the left hand for the first pellet or two, but when you get it locked you can mallet on it as hard as you wish and that filling will not rock. But it seems to be a difficult thing for some men to realize that. This same gentleman stood beside me later in the operation, as the filling was being built up, and he turned around and said to a friend: "I will be blessed if I see what holds it there yet." And so it is; the average dentist does not seem to have a mechanical perception on this question of anchoring fillings. It is simply a question of mechanics. *Review.*

ONE MAN COMPANIES IN ENGLAND.

On several former occasions we have drawn attention to the anomalies which exist at present in our laws relating to limited companies, by which the Medical, Dental, Pharmaceutical, and Veterinary Acts are being set at defiance by unqualified practitioners. As the law at present stands any seven persons, male or female, can, at a cost of seven or eight pounds, form themselves into a limited company which can practice any of the pains and penalties incurred by the individual under similar the above professions without rendering itself liable to any of the pains and penalties incurred by the individual under similar circumstances. The Pharmacy Act was the first to be attacked, and the Pharmaceutical Society some years ago carried a case against the Provincial Supply Association up to the House of Lords and was defeated. The decision pointed out that it was impossible for a company to comply with the conditions of the Act as regards education, examination, and license to practice, and it was argued from this that the word "person" could not be applicable to a "company," and as the Act only referred to "persons," no penalty could be exacted from a "company."

To the non-legal mind this sounds like nonsense, but law and common sense do not always run together, and the ruling still holds good. What the result is we all know only too well. We see companies composed of members of one family, male

and female, most of whom perhaps hold one share apiece, often of the value of a pound or less. These people having passed no examination and holding no qualification, carry on medical, dental, and pharmaceutical practices, deceiving the public, competing unfairly with qualified practitioners, and laughing at the various Acts for the protection of the public. Coroners may complain and suggest prosecution in some flagrant case of ignorance or malpraxis, but when a counsel's opinion is taken, the result always is that as the law at present stands, no proceedings against a company can be taken with success. *British Journal.*

FOR TOOTHACHE, PAIN AFTER EXTRACTION, ETC.

Dr. Welch extols the following so highly, and its uses are so varied and valuable, we present it for those who have not tried it:

Best alcohol.....	1 ounce.
Chloroform.....	2 ounces.
Sulph. ether.....	$\frac{3}{4}$ ounce.
Gum camphor.....	$\frac{1}{2}$ ounce.
Laudanum.....	$\frac{1}{8}$ ounce.
Oil of cloves.....	$\frac{1}{2}$ dram.

For toothache, plug the carious tooth with cotton saturated with this cordial. For after pain in extracting, press a good quantity of the saturated pledget well up in the socket, and allow it to remain for an hour or two. If there is fear of hemorrhage, place a little powdered tannin on the side of the pledget first entering the socket. You can also relieve the most stubborn toothache of pregnancy by first bathing the tooth and gums with cotton soaked with it, having the patient draw in the breath a few times, so as to pass the air over it. Change the saturated cotton once or twice, if necessary. It is sure to soothe the pain and the whole nervous system. For toothache in pregnancy, when suffering has been fearful and the prostration dangerous, he has always administered it with relief. Rubbed on the skin it is very penetrating and of frequent use in all painful swellings and bruises, if the skin is not abraded. In the dental office it makes the dentist master of the situation. He has studied, worried and experimented, and bought everything, in hopes of finding "the nectar distilled in the garden of the gods;" but never found it till he found this.

FILLING ROOTS.

Dr. W. C. Barrett says: No root was ever yet in proper condition for filling when it was damp, and that if the tissues above the foramen are yet breaking down, there will be serum about the apex, and this will find its way into the canal and make it damp at the extremity. The presence of moisture can best be determined by thrusting a smooth broach to the apex, withdrawing it and quickly wiping it upon the rubber-dam. If it is not entirely dry, the traces may be seen upon the rubber.

Perhaps the best dryer for root-canals is hot air. If a common valveless chip-blower be exhausted of air by pressure upon the bulb, and the point be held just above the flame of a gas burner or alcohol lamp, it may be filled with air as hot as desired. If now the point be placed in the cavity, a current of air so hot that a few blasts will raise the temperature of the whole tooth above the point of comfort may be injected. This will dessicate it completely. If the root is to be filled with chloro-percha, it should now be well drenched with eucalyptus and the hot-air current again directed upon it, until the volatile parts are driven off and the remedy caused to penetrate well into the dental tubuli.

The eucalyptus is a partial solvent for the gutta-percha, and the latter very readily flows where the former has penetrated. Gutta-percha points may then be driven into the canal until it is full, and the dentist will have the satisfaction of knowing that every point has been occupied by the root filling. Of course due care must be exercised to avoid crowding the filling through an open foramen.

Dental Weekly.

Most of us have had experience with the escape of arsenic on the gum, though such an accident is not likely to occur where reasonable care has been observed. The fault in such cases may lie in the contributory negligence of the patient. I recollect in my early practice where I applied arsenic to two bicusps in the upper jaw of a young lady, giving instructions to her to carefully maintain in position the coverings of cotton and sandarach varnish which it was then the custom to use. She was to return in a day or two, but I did not see her for a month. On examination I found considerable necrosis, and a portion of the septum had to be removed. Our greatest safeguard undoubtedly lies in the careful sealing of the application in the cavity.

S. H. Guilford.

POINTS.

H. D. Weller, D.D.S., Indianapolis.

A sharp pointed penknife is very useful for trimming around plain teeth. * * * If a small wooden handle be attached to the soldering pliers many a slight burn and by-word may be avoided. * * * It is always a good plan to have a solution of bicarbonate of soda on the laboratory work-bench to neutralize the sulphuric acid after pickling any kind of metal work. * * * The first essential point in putting in a good amalgam filling is a carefully prepared cavity, the next is absolute dryness of the amalgam while under manipulation. * * * Felt wheels such as are used on the dental engine are very useful on the laboratory lathe for polishing parts difficult to get at with the regular laboratory cones and wheels. * * * Jewelers' files are very useful in crown- and bridge-work. Much more can be accomplished with small files, especially around the crowns where bridge teeth have been anchored. * * * Before going to the chair to operate, wash the hands well with hot water and spray with good toilet water. The hot water will soften the hands and the touch will be more delicate. * * * Instead of decorating the floor and cuspidor about the operating chair with waste cotton, sand-paper disks and strips, have a small waste-basket handy at your right to receive the same. It will look more refined to your next patient. * * * A good matrix retainer for amalgam work if the filling be an approximal: First fit a very thin band of German silver around the tooth making an overlap on the lingual surface, then adjust a tight-fitting rubber-dam clamp over the middle part of band. * * * A good local anesthetic which will not cause sloughing or any other ill results:

Cocaine 12 grains.

Atropia 1-6 grain.

Carbolic acid 8 drops.

Aqua dis. ad. 1 ounce.

Sig. Inject from five to ten drops and immediately operate.

Indiana Dental Journal.

TRUING CORUNDUM WHEELS.—To true up a jointing or other corundum wheel, take a straight-edged piece of sheet-iron of about No. 22 gauge, and while the moistened wheel is revolving on the lathe hold the straight edge of the iron against the face to be trued up. A few moments only are required to obtain a surface equal to that of a new wheel. *Dr. J. D. Patterson.*

TUBE TOOTH CROWN.

Make for the root a cap, pierce this with a post long enough to reach to the end of the canal, and to extend the length of the crown, fasten the post and cap with a little sticky wax, remove and solder the two together, place the pin and cap in position, select a tube tooth and grind to fit the cap and to articulate with the antagonist, remove the post and cap and attach the crown with cement or with sulphur by heating the pin, coating with sulphur and pressing the crown on. After the crown is fastened to the post it can be ground to the circumference of the cap. A crown a little larger than the cap will allow the reduction of size by grinding.

ANOTHER WAY.

Band the root, and cement the post in the root, grind the crown to fit the band, place cement in the band and in the crown, and drive the crown to place. This plan facilitates the setting of the post by giving free access to it. *Dental Weekly.*

DOES HE KEEP AT IT ?

Editor of Success.

"The very reputation of being strong-willed, plucky and indefatigable is of priceless value. It cows enemies and dispels opposition to our undertakings."

"I know no such unquestionable badge and ensign of a sovereign mind as that tenacity of purpose which, through all changes of companions, or parties, or fortunes, changes never, bates no jot of heart or hope, but wearies out opposition and arrives at its port."

Everybody admires the determined, persistent man. Success is not measured by what a man accomplishes, so much as by the opposition he has encountered and overcome; the courage with which he has maintained the struggle against overwhelming odds; by what he is believed to have inside rather than by that which he is known to have outside.

Tenacity of purpose has been characteristic of all great characters who have left their mark on the world. Grant, even as a youth, had this quality of persistence; when only sixteen, he had a conviction that to retreat was fatal. When he undertook anything, he was determined to follow it to the very end; when he said, "I can do that," he did it.

Persistency has been characteristic of our army and navy heroes; they have never known when they were beaten: neither bullets, shells, torpedoes, mines nor bayonets have been able to stay their progress. Like Grant, they would "fight it out on these lines if it took all summer."

If a youth has not this quality of persistence in his nature; if he hesitates before obstacles; if he cannot make difficulties bend to his purpose, or cause opposition to give way, he will, at best, make but a partial success in life. He may have shining qualities of nature; may be intellectual, intelligent, industrious, courteous; but if he is wanting in persistence, that dogged determination which follows its purpose to death or victory, he lacks the one sure foundation for his life structure.

There is genius in persistence; when any one points out to us a youth of remarkable promise, or a man of great ability, we always ask: "Does he keep at it? Is he doggedly persistent? Does he hold on when others let go? Does he persist in going ahead when others advise stopping? Does he stick to it through thick and thin when others give up? Is he the most courageous when others are afraid? Does he stiffen when others begin to weaken?" If so, he will succeed.

Even a natural genius will never accomplish anything if he lacks persistence. Stick-to-itiveness and dogged pertinacity are fundamental qualities in every profession as well as in every trade and calling, the solder which welds all the other virtues and capabilities together and makes of them an invincible chain. They are to all the other qualifications what the string is to the necklace, that which unites individual jewels into an effective and beautiful whole.

Nobody has faith in a vacillating, irresolute person. There is, perhaps, no other thing which will advance youth so rapidly as to gain the reputation of being persistent, of never giving up. Such a reputation is a letter of credit which is honored of all mankind, and is of far more value than an inherited fortune in the hands of a weak-minded person.

There is a never-failing demand for the man who sees longevity in his cause, no matter what others see, or what others say; and who has the pluck and tenacity of purpose, amid ridicule and defeat, to await the issue. It is the home stretch that tests the man. It is he who possesses the ability to abide by his determination, whose staying power will not allow him to loosen his grip on his work, who insures permanent benefit. Not by sudden dashes or inspirational flashes is real success won. In the very

exceptional cases where wealth or position is thus secured, these things very seldom mean, to the individuals to whom they fall, actual good fortune, for such sudden and unearned possessions bring with them neither the wisdom to spend wisely nor to enjoy rationally. It is not alone in the acquisition of money or power that the ability to keep at it is its own exceeding reward. In getting a living, it teaches, or may teach, one how to live.

Then take this honey for the bitterest cup:

"There is no failure, save in giving up,
No real fall as long as one still tries,
For seeming setbacks make the strong man wise.
There's no defeat, in truth, save from within;
Unless you're beaten there, you're bound to win."

COMPARISONS ARE ODIIOUS.

To the Editor of the Dental Review:

In the advertising leaves of a late journal appeared the following report on some alloys tested by F. B. Noyes for the Illinois State Dental Society May 10th-14th, 1898:

Fellowship tube No. 1, expansion, one point; fellowship tube No. 2, expansion none; shrinkage none; K. & S. tube No. 1, shrank three; Dr. Kester's special, No. 2, shrank four and one-half. Other samples of Kester's alloys, tested at this meeting, showing as perfect results as those of the fellowship, were ignored in the report as published above.

Let us make a comparison from another set of experiments made by the same gentleman before another society a few days prior to the one quoted:

No. 10, Kester's frost white, expansion none; contraction none; good; perfect. No. 11, Kester's special, expansion three-fourths; contraction none; good; perfect. No. 17, Dental Protective Supply Company No. 2, shrank six and one-half; wide open. No. 21, Dental Protective Supply Company fellowship, expansion two and one-half, slight lifting.

Other alloys of our own and others were included in the experiments, but for the purposes of this letter those quoted will suffice. We have never felt justified in publishing the results of any alloy tests other than our own heretofore, and would not do so now except to show how easy it is to get evidences of superiority when you are looking for them. While the above compari-

sons are manifestly unfair they have the merit of being absolutely true, and may be verified by any one taking the trouble to examine the reports. Neither of the two reports as given above are complete, as both are garbled. We do not believe that any manufacturer has a moral right to use the reports on a rival's commodity at all, but if he does he is bound by all sorts of laws, ethical and civil, to publish true ones. We are met with the remark that "business is business," as though when a professional gentleman engages in other than professional pursuits he may lay off his honor, and ordinary gentlemanly instincts, as he would his coat, to engage in business.

We have given several years to the study of the amalgam question, and have just finished the prescribed course at the N. W. U. Dental College under the leadership of Dr. Black. We have access to the very best appliances for testing and examining alloys, and we feel justified in claiming that we can prepare as good an alloy as any one.

That other manufacturers are making and still others will make good alloys is true, as no one man or set of men may monopolize the wisdom of the whole. Yours truly

P. J. Kester.

Dr. H. B. Noble, Washington: In the District of Columbia the dentist had been officially accepted as a physician. The courts were forced to acknowledge our claims to this classification. When he had been summoned to serve as a jurymen he had claimed exemption on the ground that he was a surgeon, and though the claim had at first been laughed at, yet when he proved that he held the same diploma as that held by the man whom the Surgeon-General of the army and navy had called on to perform the operation that saved the life of Secretary Seward, at the time Lincoln was assassinated, the claim was allowed. The Surgeon-General of the United States did not know how to treat Seward, and sent to New York for a dentist, who came and treated the case, and cured it, too. Now this dentist was a graduate of the same dental college in Baltimore where I graduated, and the court had to admit that the man whom the chief surgeons of both the army and navy had to call in to treat a case which they could not save was worthy of being classed as a surgeon.

Cosmos.

REMOVING THE PULP.

If we read the signs correctly it is the intention of dentists to freeze, anæsthetize or stun the pulp so he can be got out of his lair without being killed with arsenic or cobalt or taken from an extracted tooth. There are many arguments in favor of taking the pulp from anterior teeth by any means or method which will prevent discoloration of the dentine; the only question is, how to do it. One says "Use salt water, inject it in three or four places around or opposite the end of the root." Another, "Use finely-powdered hydrochlorate of cocaine applied directly to the pulp, then take a piece of spunk, moisten it and use a large ball of unvulcanized rubber and produce gentle pressure until the cocaine is forced into the pulp, then take it out." Another says "Freeze it with ethyl chloride and take it." Another says "Use a five-per-cent. solution of cocaine (freshly made) and add one or two per cent. of formalin, and after the spunk is wet with it use the rubber ball and produce a little pressure, so the patient can feel it, and in a few minutes the pain is over—and presto—the pulp is out." (This can be used for sensitive dentine also.) Another method is to give chloroform, about ten inhalations; and still another, to use nitrous oxide and remove the pulp. Some take the pulp out by picking it with a needle point, having first covered the pulp with strong salt water solution of cocaine. This is a good method. (We do not like or approve of the method of injecting cocaine into the gums for the removal of the pulp.) Take your choice.

Editorial in Review.

VULCANITE FINISH.—Let us suppose we are putting up a full under denture, and it is ready for the flask. At this stage of the work I coat it with tinfoil, such as may be had for the asking at any store where they sell tobacco. With a piece of cloth smooth it, then cut off a strip of an inch or less in width, cover the entire surface outside, carrying it up to the cutting edge of the teeth. Smooth it, and then with the back of a penknife blade force the tin in all the interstices between the teeth so that no plaster can get in. Then cover the entire inside in the same way, and when your case comes out of the flask after being vulcanized it will be nearly clean. Cut off the escape, and if thoroughly done, your case will be almost ready for the sandpaper. It saves time.

G. V. N. Relyea, in Weekly.

ANCIENT DENTISTRY.

Dr. E. C. Kirk, Philadelphia.

In looking over a collection of ancient dental prosthetic appliances in the possession of Dr. Barrett, of Buffalo, I came across a denture which struck me as being exceedingly interesting. It was made about the beginning of the present century, and, I understand, was worn by an English military officer, who evidently used it for some years. It consists of a base plate carved of hippopotamus ivory, and six of the teeth are human crowns cemented on to this plate with posts. It is a full upper and lower denture, in which the old spiral spring arrangement is used. The interesting feature is not from the prosthetic side, but from the pathological side. We are all familiar with the belief once pretty generally held, and which I think is still held by some, that the disorder known as caries of the teeth is due to some morbid manifestation of the internal vital conditions of the tooth, or that internal vital action plays some part in it, and that an inflammatory condition accompanies the carious process. I found in this denture a number of cavities of decay, situated in the sulci of the masticatory teeth carved out of the hippopotamus ivory, so that the question of vitality in relation to caries in this instance is eliminated as a factor in its causation. That fact, however, needs no demonstration at this time. In addition to the manifestation of caries in the artificial denture, there was another and more important disease manifestation—that of erosion, not of the natural teeth used as crowns, but of the ivory of the base plate. We have in this inert material a perfect example of these two diseases.

Cosmos.

SWEATING GOLD TOGETHER.

To know how a thing is done, and to do it, are quite different sometimes. To sweat a gold band together is very delicate gold-working. Here is the way Dr. Guilford says to do it in the *Stomatologist*:

“A neat way of uniting the edges of the band is by the process known as ‘sweating.’ To do this the strip is cut a trifle longer than the indicated length, the edges beveled, one outwardly and the other inwardly, and the strip bent so that these beveled edges will overlap and rest against one another. No binding wire is needed. The band is now laid on a suitable support, a little borax applied to the joint, and the blow-pipe flame

directed on it. The whole band must be heated to a red heat and then a small-pointed flame directed on the joint. Just before the melting point is reached the edges will unite and the flame must at once be removed. The operation is a delicate one, requiring care and some experience, but the result is the best that can be obtained. Through the absence of any solder, the joint will be as soft and pliable as any other portion of the band, and no mark of union will be noticeable after polishing. The subsequent enlargement or stretching of the band (when necessary) will also be more easily accomplished than when the union has been made with solder." *Dental Weekly.*

THE DENTAL DEPARTMENT OF THE MEDICO-CHIRURGICAL COLLEGE OF PHILADELPHIA.

The annual course of lectures of the Dental Department of the Medico-Chirurgical College began on the evening of October 3d in the clinical amphitheatre of the hospital. Prof. John V. Shoemaker, the President, in his address before the assembled students, professors, trustees and guests, said:

"The Dental Department of this institution has been provided with admirably arranged, spacious and well-ventilated laboratories, probably the finest in the world, supplied with all modern appliances, especially those pertaining to the adaptation of electricity to dentistry.

"The operating rooms are well lighted and contain all the appurtenances belonging to the practical work of the profession. Oral surgery and operative dentistry are thoroughly taught by our distinguished surgeons, and at stated times clinics will be given by expert dental surgeons who have gained distinction in their several lines of work. The incumbent of the chair makes daily visits to the clinic rooms to observe the progress of the class in their practical work. The students in the Dental Department of this college possess a great advantage in being educated in scientific subjects, such as Physiology, Anatomy, Pathology, Bacteriology, Chemistry and Histology, with the students of medicine, by the teachers in the department of medicine.

"I am very glad to be able to announce to you that the Dean of the Department of Dentistry has reported to the trustees a great increase in the number of matriculants over that of last year."

FORMALIN.

Dr. A. C. Hart, California.

I have had some personal experience with the subject of formalin, especially inasmuch as I refer in my paper to its use. I have used it for two years in my practice, in sterilizing my instruments and making mouth-washes for my patients. I have found it effective in stopping the decay of the teeth.

I believe formalin acts as an antiseptic and germicide, because of its ability to form insoluble albuminates with various tissues; that is to say, it places the water in the tissues in a form that is inaccessible to bacteria; it may do this by its hardening action on the cellular structure.

Formalin is very powerful. One in fifty thousand is as powerful as one in three thousand of hydro-naphthol. If you put into a pint of water a teaspoonful of formalin, it will keep a piece of beefsteak for weeks without decaying. So you can see what you are using. These remedies are powerful in the extreme—owing to their ability to extract water from tissue. It literally burns them up.

I might mention another point that is known well among medical men in connection with the use of formalin. They take gelatine, expose gelatine to the action of formaldehyde, and form what is called formaldehyde-gelatine. This is sprinkled over the surface of wounds to promote healthy granulation and prevent infection.

As to the use of formaldehyde in cases of pyorrhea, you know often it is impossible to cause the gum to grow back on the teeth. As I say, we must progress along certain lines. We must study conditions that are presented, and meet those conditions with the requirements that we have in hand. *Pacific Gazette.*

PREPARING CAVITIES.—I recognize the ability of some few operators to fill cavities in approximate surfaces in incisors from the lingual, but I do not think it is wise to risk the durability of a filling simply to avoid exposing a little gold. Under the most favorable circumstances it requires much skill to insert a filling in the approximal surfaces, and I would protest against adding to the difficulty, as I would consider a bright gold filling looks better than a black labial margin or wall, which will very generally result. If this method of procedure is carried out, I judge that

the difficulty of access, particularly in the incisal angle, or at the junction of the incisal with the labial wall, would render it very difficult to adapt gold perfectly. I am free to confess that the cavities that have gone back on me in my practice have been the small cavities. The large cavities in which I have made great extension, even before I had any knowledge of the advisability of extension for prevention, are the ones that are to-day the best of those that I inserted in my early practice.

W. E. Harper, in Review.

EXTENSION FOR PREVENTION.

Dr. G. V. Black, Chicago.

There seems to be some who jump to the conclusion that the idea of extension for prevention is to cut big cavities. That is not correct. We extend to prevent only where there is something to prevent, a liability to caries that is to be prevented. Instead of reckless cutting, what is involved in extension for prevention is a careful study of the surfaces of the teeth as to their liability to decay. Having come to a reasonable conclusion as to the portions of surfaces that are liable to decay and the portions of surfaces that are immune from decay, then cutting so as to arrange your cavity lines, the lines of your margins, within the limit of the immunity from decay. This is what it means, and it does not mean extension of pit cavities where all the region around the cavity is immune already. For instance, take a cavity upon the buccal surface of a molar in a person twenty years of age. Almost universally that pit is sufficiently removed from the unclean portion of that surface for all its margins to be immune, when it is on account of the pit that decay has occurred there. Now, it would be simply nonsense to talk about extending such a cavity for prevention. Take, again, the cavities occurring upon occlusal surfaces that occur on account of faults in those surfaces. All around that fault the surface is immune from decay. We would not extend that for prevention; we would only extend along grooves for the purpose of obtaining a good finish. There would be no reason for extension for prevention because the surface around the decay is already immune from decay. Hence, we confine extension for prevention to approximal surfaces, to surfaces habitually unclean, to surfaces, indeed, that are especially liable to be attacked by decay; and when we find such surfaces about our carious cavity we study them closely and extend that the lines of our cavity may be laid just within the region of immunity from decay.

Review.

PRACTICAL POINTS.

By Mrs. J. M. Walker, Bay St. Louis, Mississippi.

Renewing Zinc for Dies.—When the zinc becomes unsatisfactory, place it in the melting ladle and heat to dull redness, then throw in a tablespoonful of strong hydrochloric acid while stirring with a stick or an iron rod, this will render the zinc perfectly fluid and equal to new metal.

Fletcher, Ohio Den. Jour.

Formalin.—Dr. Kirchoff employs formalin when amputating pulps in bicuspid and molars. When the coronal end of the pulp is exposed, he applies to it a mixture of formalin and zinc oxide; then covers this with cement and proceeds to build over all the permanent filling. *A. S. Eschelman, Dental Cosmos.*

To Prevent Weeping at the Cervical Margins.—When the rubber-dam cannot be forced far enough over the root of tooth to keep cavity free from moisture, flow chloro-percha over both the gum and the cervical portion of the cavity, and into base of cavity if desired as protection for the pulp.

Louis Leroy, Am. Den. Weekly.

Cataphoresis.—Leakage of current, gold, and other metal fillings, unless removed to expose the necessary surface of dentine must be insulated with sandarac varnish; otherwise the current may escape through the filling and you get almost no result.

W. B. Ames.

Root-canals also must be filled, otherwise the current will follow the easiest path—*viz.*, through the apical opening.

Dr. Hollingsworth, Western Den. Journal.

To Make Artificial Teeth Look More Natural.—Dip them, prior to setting, with hydrochloric acid, to diminish the high glossiness and make the surface more lifelike.

Br. Jour. Den. Science.

Formalin.—A formalin cement said to act painlessly in pulpitis, and, without further treatment, to permit of permanent filling after about five minutes. Gives excellent results in capping exposed and acutely inflamed pulps. Has given good results in a series of nephetic milk-molars in children four years old.

Max. Bauchwitz, trans. in Jour. Br. Den. Asso.

Metal Dies for Crown-work.—Lead is too hard to use for this purpose. I use my old air-chamber metal, remelting it. It is much softer than lead and gives definite results. First form the crown as near to the die as possible by pressure with a stick of some kind; the gauge of the gold will not then be reduced as when it is laid flat on the die, where it is held on the edge by the metal of the counter die. *John T. Usher, Dental Cosmos.*

Repairing Broken Plaster Models.—Drop half a teaspoonful of fine plaster on the rim of a plate and flow a little water into the plate so that the plaster is soaked, take a fine camel's-hair pencil and dip up the wet plaster, almost as thin as water itself, and smear over the crack as the broken parts are placed together; the water soaks into the model and carries the moist plaster into the crack, firmly reuniting the parts; when thoroughly hardened chip out tiny patches along the broken edges to afford spaces for the lodgment of the new plaster.

E. B. Edgars, Am. Den. Weekly.

Setting Time of Plaster.—When it is of importance to make plaster of Paris set rapidly it should be mixed with a five per cent. solution of common salt, say a tablespoonful to a pint of water.

Jas. A. Belcher, N. Y. Med. Jour.

Treatment of Pulpitis.—Cleanse the cavity with warm water and apply a small amount of pulverized thymol over the pulp. If the pain still continues, add one drop of chloroform to the applied drug, and immediate relief will be afforded.

Dr. Chupein, Am. Den. Weekly.

Temporary Repair of Rubber Plate—When a porcelain face has broken off, leaving the pins in the rubber, wash the exposed surfaces thoroughly with soap and water and then wet with chloroform, dry thoroughly and coat surfaces with equal parts gutta-percha and rosin dissolved in chloroform; lay a thin piece of gutta-percha over the broken surface of the plate, heat the tooth or section over spirit lamp and press to place.

R. B. Gentle, Indiana Den. Journal.

Platinoid for Dental Plates.—I have used the platinoid, in two cases, to my sorrow. It discolours badly and the patients complain of a bad taste. Both cases had to be made over on aluminum.

L. P. Haskell, Ohio Den. Journal.

Sensitive Dentine.—Apply fifty per cent. solution of sulphuric acid. It is an efficient obtundent; will do no harm, as it is self-limiting and is readily neutralized with a solution of soda bicarbonate.

F. T. Van Woert, Dental News.

The Ideal Dentist.—The ideal dentist has the head of a scientist, the nerve of a surgeon, the heart of a mother, and the touch of an angel.
C. R. Taylor, Dental Review.

Impression Plaster.—Don't pay a high price for a small can of "impression plaster" when you can take as good an impression by mixing common plaster with sulphate of potash.

J. G. Templeton, Dental Review.

Sensitive Dentine.—Campho-phenique, confined under a temporary filling for a few days, is a valuable application for sensitive dentine.

Southern Den. Journal.

Water Drinking.—Our city men and women, or many of them, go along with barely enough water to keep them from drying up. Then they become addicted to pills, tonics, massage, electricity and Christian science; dying for water while the hose is playing on the front lawn. They need to be ordered to drink systematically—not what they want, but what they need.

Dr. David Inglis, Jour. Am. Med. Association.

Pulp Devitalization—Arsenic.—A second application of arsenic is a great mistake. If the tissue within the pulp chamber is found devitalized, there is no question concerning that within the root-canals. The sensitive point encountered at the apex is not vital pulp tissue, but is due to an inflamed, irritable condition of the corpuscles of the cementum, from too large an amount of arsenic left too long in the tooth, and requires the application of dialyzed iron to neutralize the arsenic, followed by soothing anodynes.

W. C. Barrett.

Your Surplus Amalgam.—Roll any that is left over from a mix into small pellets. In filling large cavities, imbed these pellets in the soft amalgam. It reduces the tendency to shrink which all amalgams have, and is also a saving of material.

F. Mackenzie, Jour. British Den. Association.

To Anesthetize Sensitive Dentine.—Place in the cavity a pellet of cotton saturated with carbolic acid and dipped in crystals of hydrochlorate cocaine; blow hot air for a few minutes on it and a layer of dentine will be found to be anesthetized.

T. P. Hinman, Am. Dental Weekly.

Chip Blowers.—If your chip blower exhales an unpleasant odor, place a drop of oil of rose in the bulb.

H. H. Johnson, Am. Dental Weekly.

Broken-down Posterior Teeth.—When molars are so broken down that the rubber-dam cannot be adjusted for root canal treat-

ment, prepare the cavity as if for permanent filling ; fill the pulp-chamber with temporary stopping as far as occlusion will permit ; build a wall of amalgam around this. At a subsequent sitting remove the temporary stopping and proceed with treatment.

R. B. Gentle, Indiana Den. Journal.

Ichthyol in Dentistry.—Ichthyol has given excellent results in pyorrhea and in painful receded gums. Swab the pockets with the undiluted ichthyol by means of a pledget of cotton fastened to a gold needle. Syringe twice or thrice a week with a warm 50 per cent. solution of ichthyol ; also rinse the mouth twice daily with from ten to fifteen drops of ichthyol in half a glass of warm water after previous massage. No caustic effects and no discoloration. Also valuable in case of hemorrhage following extraction of teeth, placing a tampon saturated with a 25 per cent. solution in the socket.

H. Floris, Poulson's Bericht.

Heat in the Sterilization of Root-canals.—A temperature of 6° above the body temperature will render microorganisms harmless. The application of about 130° C., of four-and-a-half minutes each, will thoroughly sterilize root-canals. Such a degree of heat has no chemical effect whatever on the inorganic salts which enter into the hard structure of the tooth. But if the temperature is raised to where you get the hissing sound with the root dryer, about 170° C., there will be a drying out of the organic substance, rendering the tooth brittle.

G. W. Cook, Ohio Dental Journal.

Oxide of Zinc and Eugenol.—Using a good article of zinc (Hubbock's) and as much of it as the eugenol will take up without becoming crumbly, a filling can be inserted that will last as long as the best cement. It is valuable as an intermediate stratum on the floor of deep cavities, and as a covering to dressings, especially where it is desirable to avoid pressure, and as a filling where a non-irritating thermal protector and antiseptic is desired. In proximal surfaces of molars and bicuspid it shows no wasting for one, and in some cases two years.

S. Blair Luckie, Items of Interest.

To Remove Blood Stains.—Soak in a 25 per cent. solution of potassium iodide.

Dental Register.

To Clean Marble Slabs.—Two parts soda ; one part pumice stone ; one part powdered chalk. Mix with water ; rub well over the marble ; will remove all stains. Then wash with soap and water.

Housekeeper.

ITEMS.

TREATING SENSITIVE DENTINE.—In sensitive dentine, when patients are extremely timid, Dr. Bogue dips a pledget of cotton into carbolic acid, and then into powdered cocaine, and places it in the cavity. This, he says, will obtund the sensibility enough to use granulated chloride of zinc, with little or no pain. In ninety seconds the insensibility of the cavity is complete.

Thomas Fletcher, of England, says: "I have not the slightest hesitation in saying that a micrometer, as at present used, is of no more service than a penny whistle for testing the working value of an amalgam. If those who waste so much time on the shrinkage question would devote a little of it to studying the retention of form, their work would be of some service. No shrinkage tests will give any idea of the actual value, and those amalgams which do not alter in shape are the only ones which are really permanent in the mouth."

British Journal of Dental Science.

ANTICIPATING DECAY.—Sufficient unto the day is the evil thereof, and in this connection I am tempted to go out of my way to allude to a practice, much talked of a few years ago, of anticipation of decay, by cutting between the approximal surfaces of good teeth. It had a grain of truth, but where is it to-day? Fortunately, relegated with all the other fads of the enthusiasts to the limbo of the past. Besides disturbing the gum, it transferred the point of contact to the cervical border, after the teeth had readjusted themselves, and made the conditions still worse when decay occurred.

S. G. Perry.

Too many practitioners are in the habit of following their work day after day in a thoughtless, slipshod manner, without due consideration of the principles which should underlie all operative procedures, and without a proper study of the relations of cause and effect. When failures occur, as they do in the hands of all practitioners—some more, some less—the most profitable lesson is not always learned. No dentist should allow himself to pass over any failure, whether his own or another's, without carefully studying the particular reasons for that failure, and the problems which must be solved to avoid a repetition in the future. With the clearness of vision which this kind of study must event-

ually bring about, the practitioner will be better equipped to serve his patrons, and his failures will grow perceptibly fewer. If all dentists would bring to their work a due regard for this form of observation, it would add materially to the permanence of dental service.

C. N. Johnson in Cosmos.

TO RETARD OR HASTEN THE SETTING OF PLASTER.—Dr. Beacock, of Canada, says: To delay the setting of plaster of Paris use a little vinegar; borax will also retard its setting. Sugar, salt and sulphate of potash will materially hasten the setting, as well as harden it; marshmallow toughens it. Marble-dust, mixed with plaster, prevents its expansion, makes it stronger and better able to withstand heavy pressure, especially good for celluloid work.

Dental Weekly.

TO MAKE PIN TO EXACTLY FIT THE ROOT.—Take a piece of pine or orange wood and whittle it as near the shape as possible, and drive it into place with the gold plugging mallet; then remove and wrap around it a thin ribbon of platinum; insert it into the root and give it two or three taps to make it conform exactly to the shape of the stick; then remove both from the tooth, and remove the stick from the platinum, which leaves a core which may be filled in with any hard material, such as clasp metal, eighteen-carat gold or whatever you choose, being careful to protect the outer surface with a solution of whiting to prevent the metal flowing on the outside. This gives a dowel or pin which exactly fits the root, and upon which any sort of crown best for the case can be built.

Dr. F. T. Van Woert, in Dental Cosmos.

INVESTMENT CLEANLY AND TIME-SAVING.—Woolly asbestos, well saturated with water, forms an investment that in many cases fully replaces the usual plaster and sand, with the advantages that it is more cleanly to handle, does not run into the cracks and crevices we desire to fill with solder, and there is no waiting for it to harden. The blow-pipe flame may be safely directed upon it immediately. The pieces to be united, held together with hard wax, may be imbedded in it with the same facility as in plaster and sand. Without a moment's delay, the investment may be dried out and the wax burned off at the blow-pipe, instead of chipping it away, flux and solder applied, and the soldering completed in less time than is usually required for plas-

ter and sand to harden. The investment does not crack, but with as little or even less mass than required of plaster and sand securely holds the parts together. Woolly asbestos is not expensive, and as it can be used over again repeatedly, the cost is trifling. With a little practice its use may with advantage be extended to many cases in which heretofore plaster has been considered essential.

International Dental Journal.

SETTING GOLD CROWNS.—Take an accurate impression of the tooth to be crowned and make a metal die. Utilize the bearing upon the end so that the crown will go on exactly the same way as upon the tooth in the mouth. Make your crown, and when completed let your patient wear it for twelve or twenty-four hours without cementing it on, so as to make sure that the occlusion is all right, that the band fits perfectly at the gum margin, etc. Now oil your metal die slightly, fill your crown with gutta-percha, warm it, and keep pushing it on and slipping it off, warming it slightly, until it goes home perfectly. You have crowded out all the surplus gutta-percha, and know that you have just enough left in the crown to set it, and that it fits perfectly. Then warm it again and slip it on the root, and you give your patient no annoyance and no pain.

J. Y. Crawford, in Cosmos.

It is our special duty to our patients along the line of art in dentistry to educate them to recognize artistic work when they see it. Too frequently we see large, glaring, imperfect gold crowns in front teeth that are wholly unnecessary, and when people come into our offices it is very hard sometimes to talk them out of it. I think it becomes us to educate the people to an appreciation of artistic work, and I believe the day is fast approaching when they will appreciate and demand it, and the dentist who does not practice artistic work will not have a very lucrative practice. I believe that porcelain work is the coming thing, and it is only a question of time when we shall do more of it than at present. At present it is beyond the power of the general class of dentists, who are not educated in the manipulation of porcelain, and it is out of the reach of the majority of our patients, who cannot afford the expense attached to porcelain work, consequently we must do the next best thing and get along with the methods that we at present have, and avoid, as much as possible, a display of gold and the unnatural features of our work.

F. E. Roach, in Review.

EDITORIAL.

LEARNING TO TELL WHAT WE KNOW.

There are many dentists who could help their fellows very much if they could intelligently tell what they know. Only the other day, after seeing an unusually successful operation of a difficult case, I said to the dentist: "Now, put a description of that operation on paper and let me have it."

"Oh," said he, "I cannot write it out. I am a poor composer for the press."

"But," I persisted, "just write it as you would tell it to a company of fellow-dentists at a convention."

"That would be just as hard," he replied. "I never could talk at our meetings. I get all confused. I can work, but I cannot talk or write."

I find many in this same predicament. But it is because they have not schooled themselves to it. We cannot do anything worth the doing without rigorous discipline and persevering experience.

On the other hand, there are those who rush into print in a very loose, unprepared way. It is indeed a jumbled-up mess. They write in an incoherent, slipshod fashion, and expect the editor to rearrange and rewrite what they should have taken much more pains with. They hardly take time to make a second draft. How can they class themselves with "a profession" and remain in such ignorance of the first principles of our language? If we attempted to do our most ordinary work at the chair or in the laboratory in this manner, we would have very poor work. We are willing to "try, try again" till experience gives success. So it should be in English composition. Of course it does not come without study and labor and repeated trials. Let us have the patience and perseverance that will bring success. Telling what we do in an intelligent way will give a schooling in method and description that will help to give definiteness and success in our work.

The reason some cannot describe their methods is because they have no method to describe. I asked a housewife, once, how she made a certain cake. "Oh," she replied, "I put a little of this and a little of that together; I never stop to measure or weigh, and it generally comes out about right."

"And sometimes," I suggested, "I suppose it does not."

"Just so."

And it is "just so" with some dentists. It is not singular they cannot describe what they do.

To write well or to speak well we must think well. Only a few of us think clearly, methodically, definitely. We think at random, and therefore talk and work at random. If we take an hour a day to study some good author on English composition, and do our best each day for a while to reduce to practice what we learn, we should gradually become a good speaker and writer. And, as we have remarked, this discipline in thinking and putting our thoughts on paper would materially improve our whole practice.

Why try to make a whistle out of a pig's tail? There is plenty of better material. And in the same philosophical spirit we ask, Why try to make a dentist, or a doctor, or a lawyer, or a minister out of a young man not at all adapted for such use? We have too many in the dental and other professions attracted only by the hope of gain. That man who does not like his work is a fool for pursuing it. "Well, then," says one, "there are a great many fools." So there are. I heard one sputtering away in the pulpit the other day, and I saw another trying to fill a tooth. Both were utter failures; and if their work had been done well, the spirit in which they did it would have made them a failure. Of course, some would be a failure anywhere. The world is full of them. But most are failures either because they are out of place, and therefore out of joint with the world, or because they are blockheads in their place and deserve failure. In every department of life, success means thoughtfulness, skill, adaptability and industry, and with these a man ought to succeed.

PROMPTNESS IN FINANCES.

Never have the name of being a poor paymaster. It is sure to be an annoyance to you, and an embarrassment to your business. Even your social standing will be lowered by it. The best people, and those who would be your best patrons, want nothing to do with a man who is loose in keeping and settling his accounts, or who is tardy in paying his debts. It is still better to have no debts to pay and few accounts to keep. I make nearly a hundred dollars a month by discounting my own bills for cash on presentation; some of them at 3 per cent., but most of them at 2 per cent. for thirty days, which is equal to an interest of 24 per cent. a year. There are few men so rich that they can afford to allow their accounts to run thirty days, when to pay them on presentation they can make 2 per cent., and few men so poor they cannot pay "spot cash" for what they buy, instead of allowing their accounts to run on loosely. Besides being economical, it gives us the reputation for thrift and honor and fair dealing that is of itself first-rate stock in trade.

My wife taught me this lesson fifty years ago. It was a common custom to have "a running store account" and a little "store book" in which items were charged to be settled for once a month. If inconvenient to pay then, it might run another month, and sometimes, perhaps, three months. "It was very convenient" till the inevitable pay-time came. It was not long before wife found many "sundries" on the book she could not understand, and various little things which might just as well have been done without, and others she believed she could have bought to better advantage for cash. Nearly every month the sum total was beyond her expectation, and many times it was embarrassing to settle up.

"Now, see here," said my wife, after one settlement. "This must stop. And I have a plan to stop it. I see our average expenses are a hundred dollars a month. Now, give me that hundred dollars at the beginning of each month, instead of giving it to the storekeeper at the end of the month, and I will be bound to save twenty-five dollars a month."

"But," I replied, "I shall not always have the hundred dollars to spare you."

"Then we will do without till you have. It will do us good to economize once in a while. But be sure you get the barest necessities, if it is only potatoes and salt, till my hundred dollars comes. And be equally sure nothing will come into this house that is not paid for."

For the first few months it was difficult, but "it paid big," and even the pinch it gave us occasionally did us good, and in many ways it was pleasant and profitable. By and by wife had more money than I had, and we lived like princes, too. I found we were better off without many "little things" which it had been easy to charge, though which in the aggregate amounted to much; and that buying many things direct from the producer at wholesale for cash was another economy. All were anxious to sell to us cheap, because the cash was sure to be with the sale.

Carrying this same principle out in my business, I was finally able to keep a bank balance that was frequently very handy to draw on. I really got the reputation of being rich, because I was always forehanded instead of always behind-handed. And I certainly felt rich, because I owed no man anything, and had a little laid by for a rainy day.

REGULATING TEETH.

In regulating teeth, two faults should be avoided—unnecessary interference and any delay when nature calls for help.

If in crowded front teeth the occlusion is correct, and there is space between the centrals, nature will often overcome the irregularity; but when there is a narrow arch, and the teeth do not properly shut, the sooner you help nature the better. If you withhold assistance, the trouble will grow from bad to worse, and the remedy will be increasingly difficult. You should immediately correct the occlusion, and, if necessary, widen the arch.

Though there be space between the centrals, you cannot

always depend on their coming together of their own accord, or being pushed together by the crowding of the laterals and cuspids, or remaining so if brought in contact by force, unless the appliance is continued with persistency and for some time, because the natural tendency of the front teeth is to move backward, or toward the bicuspid.

The tendency of the back teeth is to move forward; therefore, in regulating the molars and bicuspid, you must seek space in front of the tooth to be moved. The extraction of the first molar will not generally relieve the crowding of the bicuspid; nor will the extraction of the third molar relieve the crowding of the first or second molar.

We repeat: The tendency of all the posterior teeth is to move forward; therefore, in regulating for crowding, space must be obtained in front, and not behind, the crowding. And because of the tendency of the anterior teeth to move backward, the space obtained to relieve crowding must be back of the trouble. The extraction, for instance of a first bicuspid will much more effectually relieve a crowding cuspid than the removal of a lateral.

This tendency of the posterior teeth to move forward, if space is made, is seen by the tipping forward of one of them when the one in front is extracted; but you seldom see a bicuspid or molar tipping backward because a tooth back of it has been removed.

Widening the arch of the jaw itself is a slow and difficult process. Obtaining room and width of arch of the teeth is much easier, and is generally sufficient. But much care must be taken while spreading the teeth outward to maintain a proper occlusion of the apposing teeth.



Mere aspiration is partial realization; for what we aspire to is a prophesy of what we may become. We some times call it building castles in the air; be it so; we may by and by be able to build them on solid rock.

FOR OUR PATIENTS.

PERSEVERANCE CONQUERS ALL.

Genius, that power which dazzles mortal eyes,
Is oft but perseverance in disguise.
Continuous effort, of itself, implies,
In spite of countless falls, the power to rise.
'Twixt failure and success the point 's so fine
Men sometimes know not when they touch the line.
Just when the Pearl was waiting one more plunge,
How many a struggler has thrown up the sponge!
As the tide goes clear out, it comes clear in;
In business 'tis at turns the wisest win.
And oh! how true, when shades of doubt dismay,
"Tis often darkest just before the day."
A little more persistence, courage, vim!
Success will dawn o'er fortune's cloudy rim.
Then take this honey for the bitterest cup:
"There is no failure, save in giving up,—
No real fall as long as one still tries,—
For seeming setbacks make the strong man wise.
There's no defeat, in truth, save from within;
Unless you're beaten there, you're bound to win."

Henry Austin.

LIQUID AIR.

We record in our journal the production of air—"Oxygen and Nitrogen"—in a liquid form, brought to our notice by Prof. Barker, of the University of Pennsylvania. This is no new thing, yet we have no record where its production has been made in such quantities and in such a comparatively cheap process as to permit experimentation. Prof. Dewar, of Glasgow, produced liquid air, but at a cost of \$2,500 a quart; but it remained for an American, a Mr. Charles E. Tripler, of New York, to perfect a process by which it can be made at a nominal cost.

Liquid air represents a temperature of 320 degrees below zero. A lump of ice thrown into a vessel of liquid air makes the fluid boil, because the ice is so hot next the temperature of the liquid that the heat of ice imparted causes the ebullition of boiling. It is at this temperature that air becomes a liquid, when it is subjected by Mr. Tripler's plan to a pressure of 2,000 pounds to the square inch, sending it afterwards through a coil of pipes, or what is termed "worm," through openings as fine as a needle.

After expanding by this process, it cools very considerably, maintaining this temperature.

The liquid air which Prof. Barker experimented with at the University of Pennsylvania was received in an ordinary milk can brought from New York. It was not held in iron cylinders, as other liquid gases are. It could be ladled out of the can like any other liquid, and mercury and alcohol readily freeze and become solid from the intensity of the cold imparted to these substances.

No application has yet been made of liquid air, yet it will not be astonishing that it is open to many uses in the arts, and this at the very near future.

Dental Office and Laboratory.

WHAT WE MAY SECURE FROM COAL TAR.

The wand of the alchemist becomes more wondrous in its transforming powers every day. No tale in the "Arabian Nights," no story of the wondrous treasures taken by mystic power from magic nutshells surpasses what science is doing to-day, says the *Humanitarian*.

Science, the wizard of the century, touches with his fairy wand the black, viscid coal tar from the gas retorts, and coal becomes not only a source of light and heat, but an arsenal of colors, a buffet of dainty tastes, a medicine chest for suffering humanity, a storehouse of new foods and exquisite perfumes, a source of powerful explosives for war, and so many other miraculous powers that the telling challenges credence. From the 140 pounds of gas tar in a ton of coal, science to-day makes aniline dyes numbering over 2,000 distinct shades, many of them being of exquisite delicacy, so that vegetable dyes are almost displaced.

Of medicines, antiseptic, hypnotic and fever-allaying preparations, it furnishes antipyrine, ammonol, antifebrine, asparol, carbolic acid, diuretine, dulcine, euphorine, exalgine, hypnol, malarine, naphthaline, phenatecine, phenol, salol, sulphonol, trional, hylene and a host of others.

It furnishes perfumes—queen of the meadows, cinnamon, bitter almonds, camphor, wintergreen and thymol. It has given to the world bellite and picrite, two powerful explosives. It supplies flavoring extracts that duplicate the taste of currants, raspberries, pepper, vanilla, etc. It is the housekeeper's ally, with benzine and naphtha, the insecticides. It supplies the farmer with ammonial fertilizers. It has given to the photographer his two developers, hydroquinone and eikonogen. It makes the

anatomist its debtor for a most wonderful stain for tissues. It contains the substance which tints the photographer's lens. It yields paraffin; creosote, pitch; material for artificial paving; saccharine, a substance 300 times sweeter than sugar, and saccharine-amide, still sweeter; lampblack, material for red ink, lubricating oils, varnish, resin, almost our entire supply of ammonia, and hundreds of other things—all these science brings forth from this coal tar.

By means of its products—this waste that surpasses its uselessness only by its offensiveness—we can make preserves without either fruit or sugar, perfumes without flowers, and coloring matter without animal or vegetable aid of any description.

CHARACTER BUILDING.

SUCCESS NO MIRACLE.

George W. Childs, one of Philadelphia's most successful men, was asked the secret of his success. His answer is helpful. He said: There is nothing miraculous in the success I have met with. If a man has good principles, and does his best to act up to them, he should not fail of success, though it may not be success of precisely the same kind or degree as mine. Good principles are just as good for the artist as for the mechanic, for the poet as for the farmer, for the man of business as for the clergyman. Would you learn the lesson of success? Here it is, in three words. Would you climb the ladder? Here it is, just three rounds: Industry, Temperance, Frugality. Write these words upon your hearts, and practice them in your lives.

It is a good thing to have a good motto, but it is better to live up to one. Five other mottoes have been helpful and encouraging to me throughout my busy life: "Be true;" "Be kind;" "Keep out of debt;" "Do the best and leave the rest;" "What can't be cured must be endured."

BETTER THAN WAS EXPECTED OF HIM.

I began to support myself when I was twelve years of age, and I have never been dependent upon others since. I had had some schooling, but not much. I came to Philadelphia with three dollars in my pocket. I found board and lodging for two dollars and a half, and then I got a place in a bookstore at three dollars. That gave me a surplus of fifty cents a week. I did not merely do the work I was required to do; but I did all I could, and put my whole heart into it. I wanted my employer to feel that I

was more useful to him than he expected me to be. I was not afraid to make fires, clean and sweep, and perform what some young gentlemen, nowadays, consider as menial work, and therefore beneath them. The Bible says that it is what cometh out of the mouth that defileth a man. It is not work, but character, that can be discreditable.

YOU MUST SELECT YOUR WORK.

But a man can be industrious, and yet his industry may not achieve much valuable result. You must not only work, but you must select your work with intelligence. You must be preparing the way for what you intend to become, as well as do well what lies at your hand. While I was working as an errand-boy, I improved such opportunity as I had to read books, and attend book sales at night, so as to learn the market value of books, and anything else that might be useful hereafter in my business. I fixed my ambition high, so that I might at least be always tending upward. I lived near a theatre, and many of the actors knew me, so that I might have gone and witnessed the performances. Other boys did it, and I would have liked to do it. But I thought it over, and concluded I would not, and I never did. This self-denial, if it may be called that, did not make me morose or unhappy. You must not yield to the temptation to relax your efforts, and turn off and amuse yourself. I was always cheerful, took an interest in my work, and took pleasure in doing it well, and in the feeling that I was getting on in a way to become something. When, at last, I had an office in the Public Ledger Building, I believe I said to myself: "Some time I will own that paper." At any rate, I directed my work in such a way that, when the time came that I was able to buy it, I was also able to manage it properly.

I have always believed that it is possible to unite success in business with strict moral integrity. If the record of my life has any value, it is in showing that it is not necessary to success in business that a man should indulge in "sharp" practices. Riches cannot compensate a man for the consciousness of having lived a dishonorable and selfish life.

I cannot lay too strong a stress on the matter of strict temperance. You should have courage enough to say "No," if you are asked to drink. There is no safety in moderate drinking; every one who touches it at all, is in danger. It does no good, and if the habit is continued, it is almost sure to lead to destruction and death.

YOUR COMPANY WILL STAMP YOU.

Perhaps I ought to say a word about the companions a young man should choose for himself in life. You should try to make companions of the best people you can become acquainted with. It is not necessary for this purpose to be a genius, or to have remarkable talent or extraordinary erudition. But be yourself, and be a man, and learn to think of others before yourself, and you will have friends enough, and of the best. A man is known by the company he keeps, and those who know what friends you have will be able to form a very correct idea of what you yourself are. You should see to it that this estimate be as high as your opportunities may secure.

Perhaps I cannot better sum up my advice to young people than to say that I have derived, and still find the greatest pleasure in my life, from doing good to others. Do good constantly, patiently and wisely, and you will never have cause to say that your life was not worth living.

HARDENED AND WASHABLE ARTICLES OF PLASTER OF PARIS.—For the hardening of gypsum, a firm in Heidelberg has taken out a German patent on a process which apparently surpasses all those in existence, and furnishes very satisfactory results. Either burnt gypsum is prepared and mixed with the liquid named below, or else the finished articles of hot gypsum, or of mixtures of gypsum and other bodies are impregnated by painting with the fluid. It consists of a solution of ammonium triborate in water. For this purpose, boracic acid is dissolved in warm water and ammonia added, whereby a substance really soluble in water and deviating much in its properties from known compounds results. The saturation of the gypsum, or the painting of the plaster articles is carried out into the cold. The objects are subsequently rinsed off and dried. The surface becomes very hard after two days and insoluble in water, while the induration in the interior advances more slowly. By means of the fluid described, gypsum floors can be hardened and rendered more durable and impervious to the influences of the weather. Saturating with ammonium borate is said to be especially useful on exterior walls of buildings, etc. Experiments have proved an antiseptic action of the liquid.

Scientific American.

IT IS LITTLE BY LITTLE.

As little by little we grow from infancy to manhood, so little by little we either grow in wisdom and importance and power, or by neglect and indifference we shrink little by little into weakness and uselessness and decay.

I had a beautiful tree in my garden. I had watched and attended it from a tiny sprout to a majestic trunk with luscious fruit on its symmetrical boughs. By and by I gradually neglected it. Little by little I saw change. A few leaves prematurely curled, faded and fell. Then some of the topmost branches became brittle and dry. Here and there, next to the sunshine, the bark cracked and peeled; and then the tree gave fruit which was wormy and gnarled. But these evil changes came so gradually—not in one year or two—that I hardly considered their import. One spring, working down among the roots, I found a little worm. Oh, it was so tiny and weak and unimportant—a mere trivial little thing—I thought at first it must be harmless.

“Oh, that is nothing,” said my gardener. “I never saw a fruit tree that had not some of them about the roots. They must certainly be of very little importance.”

But now I followed their minute pinholes, and discovered them perforating quite into and all along the lengths of some of the roots, and others actually worked up into the body of the tree. And what was remarkable, as they worked into the wood they grew. They left a line of powder behind them, and slowly riddled the heart-wood to rottenness. I was too late. My tree was ruined, though to a casual observer it gave little outward evidence of decay or even weakness.

Ah, we have only to neglect the inroads of subtle and subtle evils. Little by little they are sure to overcome us, if we do not overcome them. With any evil habit we gradually lose resisting power. So insidiously do they work that before the casual observer discovers their marks, or we ourselves are perhaps conscious of their power, we are inwardly weakened by the impoverishment of our own vital forces. It was years before my fruit tree gave me noticeably inferior apples, but long before this I discovered evidence of a waning tone, though many laughed at my evil apprehensions. I still had a beautiful tree. It flowered profusely, and the green fruit was abundant. But the ripening was worse and worse every year, till I finally cut it down as a cumberer of the ground. Rottenness at heart, though coming on slowly and stealthily, is a fatal disease, whether in tree or man.

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ORIGINAL COMMUNICATIONS.

ANOTHER CIRCLE OF TIME.

Well, here we are at the end of another round of time. It is now twenty-one years since I took up the editorial pen. Twenty times I have come to this stopping place, but not to stop. Some have stepped out of the ranks to rest, and others have taken their places, and are forging to the front. All hail to the new workers! Peace be to the sleepers!

But shall we that remain boast of our continuance? What merit is there in old age?—too many of us are mere fogies. Why revere the hoary head, unless with it there is “the crown of glory?” If as the years roll round we have only selfishly drawn in the dollars, and given out nothing of good to those we have passed, of what account are days and months and years? Time must be counted by the milestones of deeds well done, not by days; by conduct full of merit, not by seasons; by improvements and grand achievements, not years. Some keep step to music without advancing.

The busy world pushes aside old things and old men, to make room for the new and the young; for, in truth, of what value is long life or long work without improvement and usefulness? Verily, there are too many effete, barren cumberers of the ground—men and women that seem to have learned nothing by age or experience; yes, seem to have forgotten the little they once knew.

But, thank God, all are not of this sort. With many, age does bring added wisdom and skill, new thoughts and devices, bright inspiration and love for the work and for the betterment of the world.

How then shall we count our years? Time passes slowly in loneliness, and swiftly with loving friends. On your back

racked with pain how snail-like the days crawl along, and the nights still slower. But the new life comes, and pain and sickness gives way to the ecstasy of vigor and the inspiration of genial work—then how is time counted? You have no thought of days, so much more important are life's all-absorbing acts.

Some men of threescore and ten have few way marks along the road that point to real improvement—they can show few years of worthy experience. Most has been a barren waste with no monuments to tell the years. They can count on their finger tips deeds worth remembering—acts that have pushed the world forward. Some men live long that live but few years, because in their passing they throw out so much of usefulness and draw in so much of the virtue and the grace, and the glow of heaven that they soon ripen for the beyond.

Well, I have had a jolly time. Have you? I have spent all these years picking up the rich things I thought you would like. Have they been profitable? Now and then I have served you from my own storehouse. Have you enjoyed these tit-bits? Then follow me around another circle, and we will talk together as friend talks with friend of things most interesting. It is a dollar a ride, and the driver takes the dollar.

OUR AIM.

Our aim is brevity, clearness and distinct, practical, useful information. The busy dentist has not the time to wade through many pages to find a few valuable thoughts. He is not as interested to know the history of a subject as to see its application to his present needs; he is not so particular to hear what this, that or the other man thinks of it as to prove for himself its usefulness. See our busy dentist skip over the first page or two of an elaborate article to get at the kernel of the subject; many articles of mere theory and irrelevant discussion he passes over altogether, with many pages of association discussion that has really little of importance. That is what we do as editor of the BRIEF. We sift, and summarize, and reduce to the plainest English, giving to our readers the most important thoughts and experience

in the fewest possible words. By this means we are able to give our readers, in our sixty-four pages of reading matter, what has been spread over hundreds of pages of contemporary magazines.

There are articles so closely and so intelligently written you cannot find a word to omit; there are others containing more superfluous words, irrelevant thoughts and entire paragraphs that are much better omitted than retained.

NITRATE OF SILVER.

Dr. B. F. Arrington.

Not only possibly, but in all probability nitrate of silver is the best and most reliable of all known microbe and germ destroying remedies, and is the best and surest of all remedies for checking caries and for preserving teeth superficially affected.

It is questionable if any remedy is so essential and so effective for the preservation of the temporary teeth as nitrate of silver. If children's teeth are watched carefully and frequently, and treated properly with nitrate of silver, they will not need to be prematurely extracted, nor will they need filling.

Caries timely treated with this remedy (powerful in effect, but harmless) can be checked and teeth preserved to better advantage under some circumstances than by filling, and with economy of time, less cost and infinitely less discomfort to patients.

The occasional unsightly discoloration produced by application of the remedy should not be seriously objected to, when the comfortable preservation of the teeth is under consideration. The object in view and possible results attainable are first to be considered.

Our every action in practice should conform strictly to principles of true conservatism (human organs and the human system require it) whether profits or losses follow. The preservation of the natural teeth through the most thorough line of conservative treatment should, in my judgment, be our governing principle. With such a base for action, results following will be satisfactory, and true science in management and safe-guarding oral surgery will be advanced and strengthened.

There are several reasons why it is right and proper to preserve the temporary teeth, if possible, without excavating and filling.

Liberal experimenting for results should be practiced, not only in treatment of the temporary teeth, but with the permanent also. By judicious application of nitrate of silver the ravages of decay can be effectually checked, and teeth preserved for years in a comparatively normal state of appearance and comfort. No one can fully realize the results to be derived in the use of any remedy without freely experimenting.

If a cavity has jagged edges, trim and smooth with burs, chisels or rightly shaped excavators, as judgment directs, also the walls and base of cavity, and make as self-cleansing and as smooth as possible, that the remedy may be effectively placed in contact with the entire surface of cavity. Let the material be finely crushed, swirl cotton on an old discarded hand bur of suitable size, moisten with a saturated solution of the material, then touch to the crushed nitrate of silver and carry to the cavity or surface, twirling and holding in place for some moments, always having cavities dry, and using the precaution to protect the gums with bituminous paper before applying the remedy, and as a safeguard against injury to the mucous membrane by excess of quantity, keep at hand a saturated solution of table salt, which is an excellent antidote and easily applied by taking into the mouth and holding a few seconds. As soon as the nitrate of silver is applied to a cavity, pack tightly with cotton for several minutes, then remove and wash cavity thoroughly. The day following, or within a few days, smooth and polish cavity as may be necessary, and reapply the remedy as previously, and dismiss. The work is finished, and the chances are nineteen to one against recurrence of decay, unless the tooth is of very soft structure, then repeat the treatment, and all will go well, and no filling in question to produce unpleasant effects through thermal changes.

Saving of time, expense and discomfort to patients, in treating for preservation of teeth should be rightly considered, and practice regulated accordingly. The interest and welfare of patients is first to be considered, then the dentist.

I hold to the idea that the ultimate zenith of the science of dentistry will consist in the successful treatment and preservation of teeth without necessity for excavating and filling, or the operation of extracting, except in accident or overcrowding of teeth. Such is possible if we will halt for reflection, then start on a right line of practice, and let our teaching and practice be strictly in accord with nature's laws, as in the treatment of other organs of the body. There is no reason why it should be otherwise.

Had the idea advanced and advocated by Dr. Chopin Harris,

prior to the establishment of the Baltimore Dental College, to create a Chair of Oral Surgery in every medical college, it is possible there would not now be one tooth extracted where there are a thousand, and plates, bridges or crowning would be but seldom called for. Comfort would be realized through the blessing of health; and well preserved teeth would be much greater than at present.

We are reaching out too rapidly and too far. It will be best to draw in a little, until within legitimate limits, and regulate our practice of oral surgery for health of mouth and preservation of teeth, on a true line of conservatism. Possibly those we serve will be better served, and oral surgery as a specialty will be more favorably esteemed.

EXPOSING FRAUDULENT COLLEGES.*

As to the irregular colleges, your committee considers it the imperative duty of this body to employ every possible means for their exposure and suppression. We believe that it should protect the good name of American dentistry and American educational institutions. In this faith your committee, through its chairman, authorized the expenditure of a reasonable amount of money in the prosecution of investigations of unrecognized and irregular schools, and secured the coöperation of a thoroughly competent man for this work. As a consequence, considerable progress has been made in the unearthing of some of them. But it will probably take years of persistent effort to accomplish all that is desirable. We have received the most encouraging letters from our confreres in Europe, and have been materially aided by some of them. We have been assured that if such work is continued it must result in the higher appreciation of this association in Europe, and in the perceptible raising of the estimation in which our degree is there held. Hence, we feel warranted in urging upon you increased zeal in the prosecution of the work already commenced.

We append the names of five Chicago institutions about whose status we have made inquiries and examination, and which we believe to be unworthy the patronage of dental students, and which are not recognized by reputable schools. We present the prospectuses of such as we have been able to induce to send them:

* Report of the Committee on Foreign Relations of the National Association of Dental Faculties.

(1) "The Cosmopolitan Post-Graduate School of Dental Surgery." The name of the dean is published as C. A. Weil, M.D. The President is a man by the name of Williams, a lawyer, with an office in the Unity Building. The Secretary is a druggist, by the name of Fred. Brunhoff. These gentlemen sign the diplomas, and the instruction given, as far as known, has been in the office of one dentist Solomon, and it has been charged also at a well-known post-graduate school of Chicago for a month or so.

(2) "The German Medical College and German University of Chicago." This is located on West Thirteenth street, near Ogden avenue. The name of the dean is John Malok, M.D., who was formerly a barber in Berlin, but who came to this country and graduated from the Hahnemann Homeopathic Medical College. Malok is said to be all there is to this "college," and he offers to grant degrees in medicine, dentistry, philosophy, law, midwifery and divinity, or almost anything else.

(3) "The Independent Medical College." This is located at the corner of Van Buren and Leavitt streets, People's Institute Building. Thomas Armstrong, Ph.D., is the motorman. The post-office authorities have about run this man down, and have employed agents to procure bogus diplomas with the view to prosecution and suppression. J. H. Randall, Ph.D., M.D., (?) is the reputed Vice-President, and Charles M. Hovey, Secretary.

(4) "The German-American Dental College," located at 760 North Park avenue. Fritz W. Huxmann is the managing head of this school, which is duly incorporated. It professes to give professional instruction, and to be "regular," but it is not so acknowledged by other colleges. Huxmann was formerly connected with the Examining Board of the State, appointed by the too-well-known Governor Altgeld, and he posed then as a pillar of the law. His diplomas are not recognized by our schools, nor are students received from his institution. He has advertised extensively abroad, and has been a source of bitter reproach to American dentistry. He is not here classed with the admittedly fraudulent operators, but it is thought that a considerable of investigation as to his methods and pretensions might be beneficial to dentistry.

(5) "Illinois Academy," 324 Burling street, Chicago, Ill. Prof. Dr. B. E. Winther, "Magnificus." This is a side issue and is presumably fraudulent. Sufficient data has not yet been procured concerning this affair. It should be completely unearthed.

FRAUDULENT DENTAL COLLEGES.*

The State of Illinois is a glaring example of this kind of vicious legislation, and nearly or quite all the fraudulent colleges are now located in the city of Chicago, to the great reproach of the State and the profession of dentistry within its borders. That city contains some of the very best of our professional educational institutions, and at the same time the most villainous impostures conceivable. Dentistry in Chicago can boast of as high-toned and eminent practitioners as are found anywhere in the world, and it is disgraced by some who appear to acknowledge none of the usually accepted professional obligations, while using the professional name to further their own illegitimate ends. Unfortunately it is sometimes hard for the uninitiated to tell them apart, for some of the latter have held responsible professional positions, and use that seeming endorsement in the pursuit of their illicit business.

Men unacquainted with professional educational affairs, who know not the wiles of designing tricksters who would take advantage of an innocent law to further their own selfish purposes, are not the best judges of what is proper legislation for the professions. In an unsuspecting moment, and without sufficient consideration, there was placed upon the Illinois statute books an enactment which, while assuming to further business interests, and honestly intended for their benefit, allows the incorporation under the law of associations that may carry on a fraudulent diploma business. So loosely or so nefariously drawn was this law, that for the merely nominal fee of registration, amounting to less than five dollars, totally unqualified men may be permitted to issue diplomas of qualification in the different professions. This seems a monstrous state of affairs, but it has been suffered to exist for years. The citizens of other States are powerless, for Illinois is supreme within her own jurisdiction, and she continues to protect her criminals in their villainy. The task of securing the repeal of this vicious law is too great for the courage of its reputable men, for ignorance and vice have struck hands in its maintenance. Even the excellent and influential Illinois State Dental Society has looked upon this condition with seeming indifference. As a consequence of the continuance of this demoralizing law, a considerable number of the practitioners of Chicago

* Report of the Committee on Foreign Relations of the National Association of Dental Faculties.

carry in their pockets, or exhibit on their walls, college charters conferring upon them the power to issue diplomas in dentistry. A number of advertising offices are legally conducted under such names as "The Illinois Academy of Medicine and Dentistry," "The College of Painless Dentistry," "The Union College of Dentistry," etc., and the certificates of the Secretary of State, under the great seal of the State of Illinois, can be obtained certifying to their entire legal respectability and status. It seems to your committee that the decent part of the profession of this grand State should begin an agitation for the repeal of this vicious law. It is earnestly to be hoped that as soon as the professional men of the State are aroused from their lethargy and made to comprehend the enormity of the condition, they will present the subject before the legislature in its proper light, and the disgraceful law will be so amended that it will not apply to educational institutions, and the charters already issued under it will be very promptly canceled.

Some of the so-called dental colleges have no other existence than this State incorporation. They are owned and run by one man, and he perhaps sails under a false name. Of course, if they give no instruction, and yet confer degrees, they are amenable to the law against fraud. But their diplomas are not offered at all in this country, being only advertised abroad. They know very well that if they attempt to ply their trade at home they will speedily be brought to grief, and so they permit no proofs of their work to come to light in America. There is no indication of their business at their published address, and any letters sent to them from this country are carefully left unanswered. Their work is done through European agents. We can not locate them, and there are no proofs to be obtained in this country. Our confreres abroad complain bitterly of these swindlers, but they do not comprehend the situation, and when we ask them to obtain the proofs of their villainy, they reply that the miserable affairs are under our immediate notice, and we should get the testimony here.

Sometimes our professional journals, and some of our prominent men, and even professional organizations instituted for the purpose of regulating dental practice here, unwittingly further the objects of these men by falsely charging that respectable schools are practically engaged in the same business of granting irregular degrees, and thus they efface the line of distinction that the reputable colleges have been striving to set up. It is a singular fact that nearly or quite every application which approved colleges receive for irregular degrees comes from Europe, and

because of these miserable villifications of respectable schools by American dentists acting with more zeal than discretion and more fervor than knowledge, there is not an American college that is free from these insulting applications.

This is the condition that confronts us in America. This association has done what it could, and advanced as fast as it could. It has been embarrassed by the lack of coöperation, and even by the active opposition of those to whom it had a right to look for help. It has been denounced because it has not taken the radical steps demanded by men who have little comprehension of the difficulties to be met, and who do not understand that the tone of the colleges, and the profession as a whole, can only be advanced by a movement that is made as a whole. At the most critical moment, the ground that had been gained has been lost through the absolute refusal of some of the colleges to vote to sustain the most moderate requirements, and it is astonishing that so much has been accomplished. This association has sharply drawn the line between the reputable and the disreputable schools, and despite the fact that over-zealous and unwise men have been industriously engaged in effacing it, and confusing the good with the bad by claiming that all have the same character, in this country the distinction is clear and well known. It should be, and if these ill-advised strictures are abandoned, it will soon be as well comprehended abroad. All that is necessary is to scan the list of the members of the National Association of Dental Faculties, and if the name of an institution granting a diploma is not found in it, that document is unacknowledged by this association. If any college that has a membership in this association grants a degree or accepts a student irregularly, the faith and honor of every other member is pledged to inflict the most condign punishment upon presentation of the proofs.

But it has been charged that violations of the rules have been committed by members without subsequent punishment. There appears to be an impression that it is the duty of the association to discipline a college upon mere rumors and to inflict punishment without proofs. This would be the rankest injustice. There has never yet been definite charges made against a college by any responsible party, without accompanying proofs or positive information where evidence could be found, without the most thorough investigation. It has been charged before your committee that the Stauber instance was such an one. But in that the implicated college corrected the error of its own volition. The remedy for infraction of our regulations thus rests in the hands of every

respectable member of our profession, for so carefully has this association guarded this point that it has appointed a committee with plenary powers for the express purpose of investigating charges of irregularity brought between the sessions, thus offering swift as well as exact justice.

THE IMPORTANCE OF ESTABLISHING A TECHNIC AS WELL AS LITERARY STANDARD FOR COLLEGE ENTRANCE.*

S. H. Guilford, D.D.S., Ph.D., Philadelphia, Pa.

The good results accomplished by this association in its sixteen years of existence are not only universally conceded, but will ever remain as proof of the wisdom of its organization and its general endeavors to elevate the standard of practice. It was realized that this could only be done by sending into the profession men better equipped for practice than the majority of those then entering it. This required certain changes in the prevailing methods of college instruction, some of which have gradually been brought about while others are in course of development. The association first addressed itself to lengthening the course of study. The recognition of five years' practice as an equivalent of one year's course in college was done away with and an invariable two years' course demanded.

Then came the lengthening of the winter term from four to five and subsequently to six months, after which another year was added to the college curriculum.

With all these advancements, however, beneficial as they were in their results, it was found that a proportion of the yearly graduates were not up to the standard demanded either by the public or the profession, and another change became necessary to remedy the condition. At the time of the organization of this association, and for many years afterward, there were very few dental colleges that inquired into the earlier educational training of those who applied for admission. It seemed to have been taken for granted that anyone applying for admission must have had sufficient mental training to enable him to grasp and pursue the various studies of the curriculum. This proved to be erroneous, for it was found that while a student might, by close application, manage to pass his examination in the theoretical

* Read before the National Association of Dental Faculties, August 29th, 1898.

branches, he did not have that general grasp of these subjects which was necessary to make him a well-rounded man.

Following this discovery came the adoption of entrance requirements, which necessitated a certain amount of mental training in the schools before the candidate could be allowed to begin his collegiate studies. These requirements were very moderate at first, but were gradually increased until they equaled the completion of a full grammar course.

This far the plan had worked admirably, principally because it was gradual. Two years ago, however, a further advance was decided upon by which, in the course of a few years, the entrance requirements were to equal completion of a high school course. This change was so radical in character that it worked a hardship upon many students who were not able to meet it, and who in consequence were debarred from college entrance.

As a result of this, one year ago the latest advance was annulled and the requirements reduced to their previous standard. This retreat from an advanced position was regretted by many schools, and the question of some advancement from our present standard will doubtless come before the association at its present meeting.

In anticipation of this your essayist decided to prepare this paper for the purpose of presenting certain views upon the subject and offering them for your consideration.

As previously mentioned, the raising of the entrance requirements to equal a completed grammar school course has proven itself a wise act, and none have cause to regret it. With less preparatory training it was found that the student's mental faculties had not been properly awakened nor correct habits of study formed, and that he was in consequence placed at a disadvantage in trying to acquire a knowledge of at least some of the more abstruse subjects which he was expected to master.

In view of the fact that the advancement to the present standard has worked well, the question naturally arises as to whether a further advancement would not be advisable, and, if so, what form it should take. Strange to say, we have thus far been viewing and treating the subject of preliminary requirements from a single standpoint. All of our discussions as well as our enactments have dealt solely with the mental acquirements and possibilities of the proposed student, entirely overlooking or ignoring the equal or more important feature of manual dexterity or mechanical bent.

All of us are fully aware of the absolute importance of

mechanical talent in the practice of our profession, and we are equally cognizant of the fact that unless this talent is innate it will always be lacking, for it cannot be acquired. No amount of training and instruction can develop a skilful mechanic out of one who lacks the mechanical instinct. If this be so, is it not important that we, as teachers, see that those who place themselves under our care for preparation for their life-work are possessed of this necessary qualification? In former times, before the wave of progress had swept across the beaten path of dental education, when the student received his preliminary, and at times the greater part of his dental training in a preceptor's office, or rather laboratory, it was an almost universal custom for the practitioner, before accepting a student, to ascertain whether he possessed a natural bent in the line of mechanics.

This was done by inquiring into the young man's turn of mind, his fondness for tools, and their employment in constructing some of the simple mechanisms so necessary to the complete happiness of boyhood. In addition to this it was customary to accept the student for a certain period upon probation, to still further ascertain his adaptability to his proposed life-work.

While in these later times we recognize the shortcoming of our predecessors in not demanding at least some educational requirements from their students, may we not at the same time take a hint from their methods, and incorporate some of their requirements into our own? In other words, has the time not fully arrived when we should demand mechanical talent as well as scholastic acquirements as preliminaries to entrance upon the study of dentistry?

The dentistry of to-day owes much of its progress and high standing to the class of men who entered it from thirty to sixty years ago under the private studentship system. Almost without an exception they were men possessed of a high order of mechanical and inventive ability, and they were so because they were selected from the mass by their preceptors.

It would seem that in this, as in many others, we have been rather blindly following in the footsteps of our sister profession, medicine, not fully appreciating the differences that exists between them. Dentistry occupies rather a unique position among the sciences and professions, in that to be of the greatest service to mankind the practitioner must necessarily be possessed of considerable manual dexterity.

This is not required of the lawyer, the theologian, or the physician in ordinary practice, for their success depends mainly

if not entirely upon the development and use of their mental faculties. For one undertaking the study of any of these professions it is therefore quite proper that the only qualification demanded should be scholastic.

Should the student of medicine prove to be possessed of mechanical talent, he will, after graduation, naturally drift into the special practice of surgery, which will be more to his taste, and afford him a better field for the employment of manipulative skill. Should his taste not run in the mechanical line, he still has in the domain of general practice and some of the specialties a large field for successful effort.

With us it is different. To properly serve the needs of his patients the dentist must be skilful with tools, for so large a part of his daily work is manipulative in character. If he lacks this skill he must prove a failure, for in the practice of dentistry there is no place for the employment of the mental faculties alone as there is in medicine.

The vocation of the instrumental musician bears some little resemblance to our own in that it requires for its successful pursuit not only the development of the mental and esthetic qualities, but an absolute dependence upon manipulative ability. Without the latter the former quality would be of no avail. A teacher of instrumental music would probably prefer to have as his student one with a liberal education, for he would add luster to his chosen calling; but he would certainly not accept or retain as a pupil, whatever his literary attainments may be, one who was lacking in technical ability.

Why, therefore, should we do less?

It therefore seems to me that it would only be the part of wisdom for us to so amend our requirements as to include manipulative ability, and where this is lacking to reject the student and advise him to take up some other calling. It certainly does not seem just to accept a student who is by nature lacking in that quality which is absolutely essential to his success in practice.

With our greatly improved methods of systematic technic instruction we have certainly accomplished good results with the material given us, but how much better might have been the results with the material properly culled. Many students, as we all know, manage to work along through college, performing their allotted tasks and passing the required examinations, who we are morally certain will not be successful in practice, because all that they accomplished was performed in a labored way, without any display of actual skill.

Are we just to them and to the public in permitting this? Should we not discover the lacking quality before accepting them, or find some way of discovering it in the early part of their course, and kindly advise them to change their vocation?

If by some extra effort on our part we were able to develop skill where natural ability is lacking the conditions would be different, and we would be relieved from the necessity of considering the question; but unfortunately we cannot grow the plant where seed or soil is lacking.

The question now arises, What shall the mechanical standard be, and how may it best be incorporated with the other requirements? This is not for me to answer. It is a problem, and its solution will require the united wisdom of the members of this association.

By way of suggestion, however, I would offer the following:

1. The student should be assigned a desk or bench in the laboratory, furnished with the necessary tools and material, and be given an appliance or device which he is to reproduce as accurately as possible.

2. The task assigned should be such as to preclude the probability of his having done work of exactly similar character before, so as to guard against mere automatic repetition.

3. The ordinary laboratory processes, involving no special skill, such as repairs or additions to vulcanite plates, should be excluded.

4. Where the candidate has had no experience in the use of some of our special tools or processes, such as soldering, swaging, etc., the test should be simple in character, and might consist in requiring him to reproduce from a block of wood, by means of saw, file and penknife, some geometrical form, as a cube, pyramid, or rhomb.

5. Where the applicant has had some laboratory instruction or practice before coming to college, the test should be a little more severe in character. Inasmuch as regulating appliances are so varied in character, and often combine a number of different manipulations in their construction, such as filing, bending, soldering, etc., the construction of one of unusual design would probably furnish the best all-around test of ability.

6. During the test the student should be isolated until the task is completed. A competent demonstrator should watch the progress of the work from time to time, so as to form an opinion of the candidate's handiness with tools, but should offer no aid, even in the way of suggestion.

OUR QUESTION BOX.

With Replies From The Best Dental Authorities.

[Address all Questions for this Department to Dr. Harry Beers Hickman, No. 719 N. 17th Street, Philadelphia, Pa.]

Question 8. *Two central incisors, where the gum has receded and left the roots sensitive to thermal changes. All deposit has been removed and roots touched with nitrate of silver with only temporary relief. The teeth are firm and without decay. Would you suggest devitalization of pulp, or how should they be treated?*

Rather than use nitrate of silver, which would turn the teeth very dark, I would apply arsenic to pulp.

Dr. George R. Beecher, Philadelphia, Pa.

If common table salt had been rubbed on the nitrate of silver, to form the chloride of silver, I think the relief would have been more permanent, but devitalization would be the surest.

Dr. Harry B. Hickman.

Question 9. *What is your treatment for congested pulps?*

It depends on circumstances. As a rule, I would apply a dressing of carbolic acid and iodine to try and keep the tooth comfortable for two or three days. I would then make an application of arsenic, remove the nerve, and fill the canal.

Dr. Howard E. Roberts, Philadelphia.

Reduce the congestion and apply arsenic. *Dr. Beecher.*

In treating a congested pulp I strive to get a large exposure, to which I apply the anodyne, which gives the best results. Sometimes oil of cloves or carbolic acid give immediate relief, sometimes none whatever; and so other drugs. Chloroform most always allays the pain, temporarily at least. If I can control the pain the first sitting, I do not hesitate to apply arsenic, though, in most cases, I prefer to make the application for devitalization on the second day.

Dr. W. D. Tracy, New York City.

Question 10. *Do you use aristo-paraffin for pulp canal filling? If not, what material do you consider best for that purpose?*

I use aristo-paraffin for root-canal filling, except where I have bleached; then I use either oxychloride of zinc or gutta-percha.

Dr. Beecher.

I prefer gutta-percha.

Dr. Roberts.

I have never used aristol, but have used the iodoform and paraffin, and successfully, as far as I know. My usual method of filling the canals is with a pink gutta-percha cone dipped in eucalyptus oil and then in dry hydronaphthol powder, and pressed in the canal. I find it sometimes necessary to fill with fibers of raw silk dipped in creosote and hydronaphthol powder.

Dr. Tracy.

Question 11. *A boy of thirteen years, to all appearance healthy, applied to me with an aching tooth; but as I was out of town, a physician removed an upper temporary molar. The face was badly swollen, and the patient had a high fever. Two days later a physician was called again, and found necrosis. He removed the loose teeth and sequestrum. When I saw him four days later, or seven days from the beginning of the trouble, he had a temperature of 105½, and the swelling had reached his forehead, and all the teeth in the upper jaw except the left molars were loose, and could be removed with the fingers, which I did, without any discharge of blood, as the gums and alveolus seemed dead. On probing, I found an encysted second bicuspid, with root only half-developed, black, soft as paper, and the pulp had been dead for some time. While he had shed all his temporary teeth in his lower jaw, he had shed only one in his upper jaw. From his history I could find no hereditary taint. When I saw him he was already turning a copper color, and I gave no hopes of his living. He died two days later. Kindly tell me the trouble and what would have been the proper treatment?*

This is a difficult question without seeing the patient; but according to the opinion of several authorities it was blood poisoning, due, perhaps, to the encysted bicuspid. No treatment would have done any good at the stage you saw it. *Dr. Hickman.*

Question 12. *Have you noticed an increase of odontalgia among your patients just before a storm? If so, give a cause?*

No.

Dr. Roberts.

Yes. I supposed it was due to a tendency of the patient to take cold. When the system is disarranged by a cold, the circulation is affected and there is a tendency to congestion, especially in the capillary circulation, causing abnormal pressure. If there is any part of the economy where the vitality is low or a latent trouble exists, that part will feel the effects of a cold.

Dr. Tracy.

WATERBURY, VT., October 17, 1898.

A few weeks ago I had some trouble when making a seamless crown in using lead as a female die, as the lead stuck to the crown badly. I wondered how modeling composition would work. I took some quick hard setting composition and warmed it as usual. I then forced it in an old brass bell and forced the zine die into it and cooled under water. I think it better than lead. I have used it several times with success.

Respectfully yours,

J. T. Wheelock.

DR. J. H. WOOL, Pulaski, Va.

Dear Doctor:—I think the following will meet your requirements regarding the case of fifteen-year-old girl:

Remove all "metal fillings," wipe out cavities with ol. cassia, and fill with Caulk's cement or its equal.

Then treat patient for acidity of the oral secretions. The following prescription is generally sufficient, repeated as needed:

R. Milk of Magnesia (Phillip)..... ʒxii

Sq..... ʒii

Three or four times daily, as a mouth wash.

J. Fred Downs, D.D.S.

RECENT PATENTS RELATING TO DENTISTRY.

29219, Tooth-brush, design, Julia F. Ufford, Boston, Mass.

609639, Electromedical apparatus, Reinhold H. Wappler, New York, N. Y.

609875, Electrode for medical purposes, Marian N. Clarke, Wilkesbarre, Pa.

609843, Sprayer, De Wane B. Smith, Deerfield, N. Y.

609923, Inhaler, George H. Tuttle, assignor of one-third to F. H. Willard, Cambridge, Mass.

609982, Hypodermic syringe, Benjamin T. Winchester, Baltimore, Md.

610483, Tool-holder for dental handpieces, Charles P. Fritz, assignor to W. M. Speakman, Philadelphia, Pa.

610214, Dental Engine, John D. Wilkins, assignor to J. N. Crouse, Chicago, Ill.

612590, Dental engine, Albert E. Macdonald, San Francisco, California.

612760, Surgical chair, Edward J. Wells, assignor to Taylor-Wells Company, Morristown, Tenn.

611038, Surgical injector clamp, Benjamin H. Lohman, St. Louis, Mo.

611023, Surgical case, Ferdinand A. Reichardt, New York, N. Y.

611185, Rheostat, Charles H. Richardson and L. McMakin, Jr., assignors to S. S. White Dental Manufacturing Company, Philadelphia, Pa.

611410, Tooth-powder receptacle, Thomas O. Holland, Philadelphia, Pa.

11696, Reissue, dental spittoon, Frank Hurlburt, assignor to A. C. Clark, Chicago, Ill.

611531, Dental plugger, John W. Tenny and R. T. McCracken, New Orleans, La.

611788, Tooth-brush, Isaac N. Lincoln, Providence, R. I.

611670, Rubber-dam clamp, Joseph Wittowski, Berlin, Germany.

TRADE-MARKS.

31962, Powder for cleaning and polishing the teeth, Thomas Hollis, Boston, Mass.

32020, Medical preparations destructive of bacteria, Charles Patin, New York, N. Y.

LABEL.

6665, Edward P. Weed, Norwalk, Conn., "Dr. Many's Antiseptic Tooth Powder" (for tooth powder).

613222, Atomizer, Charles M. Blackman, New York, N. Y.

613190, Clinical thermometer, Frank Cossor, assignor to S. Maw, Son and Thompson, London, England.

612902, Dental engine, Martin H. Hopfer, Minden, Neb.

613413, Atomizer, Argo M. Foster, Cleveland, Ohio.

29560, Design, Handle for dental pluggers, George E. Greene, Gardner, Mass.

613905, Sprayer, Leonard Knetzger, Du Quoin, Ill.

613842, Bracket attachment for dental chairs, John A. W. Lundborg, San Francisco, Cal.

613772, Dental articulator, John W. Moffitt, Philadelphia, Pa.

613711, Mold for artificial teeth, Alfred Page, and S. S. Bloom, Philadelphia, Pa.

613947, Dental matrix retainer, Joseph M. Strout, Portland, Maine.

John A. Saul, Solicitor of Patents, Washington, D. C.

CURRENT THOUGHTS.

THE EDUCATIONAL ATTITUDE.

The man whose life is intelligently ordered is always preparing himself for the highest demands of his work; he is not only doing that work with skill from day to day, but he is always fitting himself in advance for more exacting and difficult tasks.

If a man is to become an artist in his work, his specific preparation for particular occasions and tasks must be part of a general preparation for all possible occasions. It is not only impossible to foresee opportunities, but it is often impossible to recognize their importance until they are past. It is well to know by heart Emerson's significant lines:

Daughters of Time, the hypocritic Days,
Muffled and dumb like barefoot dervishes,
And marching single in an endless file,
Bring diadems and fagots in their hands.
To each they offer gifts after his will,
Bread, kingdoms, stars, and sky that hold them all.
I, in my pleached garden, watched the pomp,
Forgot my morning wishes, hastily
Took a few herbs and apples, and the Day
Turned and departed silent. I, too late,
Under her solemn fillet saw the scorn.

The days which come so unobtrusively and go so silently are opportunities in disguise, and to enable a man to penetrate that disguise and discern the royal figure in the meanest dress is one of the great ends of that education which must always, in some form, precede real success. For nothing which endures is ever done without some kind of preliminary training. Men do not happen by chance upon greatness; they achieve it. Noble work of any kind is the fruit of laborious apprenticeship, and from the higher forms of success the idler and the amateur are forever shut out. . . .

Whatever a man secures in the way of power or fame he pays for in preliminary preparation; nothing is given him except his native capacity, everything else he must pay for. To recognize opportunity when it comes, or to make the highest use of it when it is not to be recognized at the moment, involves constant enrichment and education of the whole nature.

Hamilton W. Mabie, in the Congregationalist.

"A FEW OBSERVATIONS."

R. B. Cummins, D.D.S., Blairsville, Pa.

Scientific experiments are a great thing, but how often they are hobbies ridden to death.

Antisepsis is one the medical and dental professions are exercising now.

Only a few days ago we heard of a mother who was trying to follow out the instructions of the family physician. She said they were about to give up trying to give their son an education as they could not get him sterilized every morning in time to go to school.

It is pleasing to think of the amount of common sense advice that can be given by the dentist at the chair, and of what good fruit it will bear. But if we get into the microbe war and give a long worded wearisome talk of their action on matter, molecules, etc., the patient will begin to wonder how long it takes to fill a tooth anyway.

We must not shirk our duty in respect to teaching patients how to take care of the work or services we have rendered them, as upon their treatment of it depends very much of its permanence. Jonah tried to shirk his work, and remember what came of him.

Teeth may be preserved if we do our work well and the patient takes care of it. Dentist and patient must work together or there will be lots of failures and the former will get all to his credit.

Tell patients to brush their teeth after every meal. If they cannot brush teeth but once a day, tell them to do so just before retiring.

Encourage patients to learn the value of their teeth and they will appreciate and care for them. Tell the patients who use their influence for you that they cannot do a better work for you than to take good care of the fillings you have inserted for them.

When, by a united effort, we can frame a law that will be in accord with the ideas of every State dental society in the Union, we may expect to show to the world that we stand, as one man, for what is right and lawful. Any practitioner who has conducted an honorable practice in one State should be permitted to remove to another, without having to undergo the ordeal of an examination under a board of dental examiners, who do not con-

sider common sense one of the most necessary elements in the conducting of a dental practice.

Sydney Smith says, "Let every man be occupied, and occupied in the highest employment of which his nature is capable, and die with the consciousness that he has done his best."

Work is one of the best educators of character. It gives discipline, self-control, deftness and skill in his special calling. Work is the law of our being and gives aptitude and dexterity in dealing with the affairs of ordinary life. Hobbies are useful as educators of the working faculty. Hobbies bring industry of a certain kind, and at least provide agreeable occupation. It must not be ridden too hard, else, instead of recreating, refreshing and invigorating a man's nature, it may only have the effect of sending him back to his business exhausted and depressed. It is not work, but overwork that is hurtful; and it is not hard work that is injurious so much as monotonous work, fagging work, hopeless work.

Ohio Journal.

TOBACCO FOR DELICATE NERVES.

I have seen an old man of eighty who had been steeped in tobacco all his life, and yet never conscious of its injuring him. You and I have seen old men who had been for years pickled in whisky and still in comparative health. And scores and hundreds site these abnormal, exceptional and disgusting phenomenal samples from the pickle tub and the smoke-house to justify their own indulgence in these deadly narcotic stimulants. We must all admit that there are those who can indulge in gluttony and poisons, and in all manner of excesses and irregularities, and still live on, as immune soldiers do, though exposed to yellow fever and small-pox. But how foolish for us to risk our health and life, and become a nuisance to our best friends, by these indulgences.

"What makes your hands tremble so?" I asked a young man as he was putting in a gold filling.

"I don't know. Somehow I am all broke up," he replied.

After he had dismissed his patient, I said to him:

"I would consult a physician."

"I have," he replied, "but I don't like his prescription."

"What is it?"

"Oh, the fool says I must leave off smoking. It makes me out of patience to hear such nonsense. Why, I have been smoking cigarettes ever since I was twelve years of age. Strange I should never know they hurt me. My father has smoked

an old pipe ever since I can remember, and he is as healthy as a buck. Almost everybody smokes. And are not smokers generally in as good condition as your puritanic saints? Prof. Johnson is as great a crank as Dr. Jones. He told me while at college he did not expect students that smoked to get on as well as those that did not. But I could see no difference. I am nervous, that's all."

"Then take a good, long outing."

"I was gone two months last summer, but it did me no good."

"I see your voice is coarse and husky."

"Yes; I used to be a pretty good tenor singer, but I have given up singing. And you observe I am using glasses; but that is fashionable now. But somehow my sight is flighty and variable. Sometimes I think it is better than common, and then again I can hardly see to fill a tooth. I change my glasses, and sometimes my right eye will need a glass quite different from my left eye, and the pupil of my eyes differ."

"I would try and leave off smoking for a while, and see what that will do."

"Oh, I have tried that a dozen times, and it makes no difference. I soon come back to my smoke. I can't be quite a saint or a puritan, and sacrifice my pleasures."

"It is a pity you have not the blunt, stolid, phlegmatic temperament of these fellows that can abuse themselves, and yet find their system somehow adjusting itself to these artificial appetites and excesses. They no doubt all suffer, but not with equal severity. But with your sensitive, delicate, nervous organization you have to behave or make a wreck of yourself."

"Ah, you can't scare me in that way. I'll let up a little, and see what that will do, but I am not going to turn saint or puritan."

That young man's cigarettes sent him to the State Asylum, a demented wreck of thirty-five. In six months he died there isolated from sympathy and friends.

John Carter was as promising a young man as lived in Marysville. He was remarkable in music, oratory, wit and repartee, and noted for urbanity, politeness and exemplary conduct. Cigarette smoking was his only fault. He smoked no more than his associates; but somehow they downed him. At twenty he died of "a tobacco heart."

A Sunday-school superintendent invited me to address his school, and I warned the boys against this demoralizing habit. "Why," said I, "what would you think to see your nice, clean

looking superintendent with a cigar in his mouth?" And they all laughed; but I did not know they were laughing at his expense. After the school was out, this "nice, clean looking" superintendent took me to task for insulting him. I was surprised. "Is it possible you smoke?" said I.

"Yes, sir; I smoke," said he.

"And would you advise your boy to use tobacco?"

"No, sir; I would flog him within a half inch of his life if I found him with a cigar in his mouth."

"Why," said a boy, as this wrathful superintendent left me, "He need not brag about his boy. He smokes now." Why should he not with a father for an example?

At twenty-eight years of age that boy was obliged to leave a lucrative business, and be a letter carrier to keep him out of doors and give him plenty of exercise. Poor fellow! he is a consumptive now. His physician said to him recently. "I told you if you went back to your cigars you would go to your grave." And he is on its verge, though at the last hour he has again quit smoking. His father is but little better off—all from the narcotic poison of this subtle, deadly narcotic.

My neighbor's boy George, has come back from college before he graduated. His sight gave out; at times he was light-headed, had palpitation of the heart, and was generally enfeebled. He looks queer enough with green goggles on. His doctor says cigars has done it all. I told the Dean what the doctor said.

"Oh," he replied, "that boy's case is not a rarity. Cigarettes are such innocent looking things that boys, who would think it debasing and wicked to smoke an old pipe, will smoke these, and think it innocent pastime. But, of course, we know they are quite as bad as any form of tobacco. They are ruining some of our brightest boys. Sometimes I think the brighter the boy the worse he is hurt by them. It is a terrible evil. In our college we try to suppress the whole habit of the use of tobacco. But as long as their fathers use it, what better can you expect in their boys? We never expect as much from students that use tobacco as from those who do not. A naturally dull boy, free from this narcotic poisoning habit will finally pass the smartest boy that is addicted to it."

Said that shrewd observer, Thomas Carlyle:

"Blessed is the man who has found his work; let him ask no other blessedness. Know thy work, and do it; and work at it like Hercules. One monster there is in the world, the idle man."

SOME PROPERTIES OF VULCANITE RUBBER.

Dr. S. E. Davenport.

I take the liberty this evening of calling attention to some properties of vulcanite rubber which I think are not generally understood.

These characteristics are principally useful when changes are being made in old plates, the additions of new rubber or teeth, or the repairing of fractured plates.

I remember well, when practicing in the country about twenty years ago, a man coming into the office with bottles of some fluid, the application of which to a rubber plate, he said, would enable one to stick new rubber to the old without subsequent cleavage.

My father, in whose office I was, expressed considerable amusement over this, for he had been adding new rubber to old for many years without the use of chemicals.

Unvulcanized rubber, when forcibly pressed with a hot instrument against a clean, dry surface of rubber already vulcanized, will form, when vulcanized, a perfect union with the old rubber, and will break as quickly at any point as at the junction of the new and the old.

Should a rubber plate need a new block or tooth, the old block or tooth having been removed by the application of heat and the pressure of an instrument, a sharp scraper and engine burs should be used to cut away some of the rubber which held the block in position, particularly the portions in which the pins were embedded.

The new block now being ground and fitted for position, the old rubber is again scraped to insure a clean, dry surface, and small pieces of rubber should be spread upon this surface with a flattened instrument repeatedly heated in a flame. An instrument which is not sufficiently hot sticks to the fresh rubber and causes it to drag. When sufficient rubber is stuck to the surface, the block should be heated and pressed to its place, a cloth protecting the hand. Any rubber which may squeeze out should be trimmed off, the plate invested and vulcanized.

Fractured plates should be brought into proper position, pieces being held with softened wax on the lingual surface until plaster can be poured upon the surface which fits against the gum.

The thickness of rubber should then be reduced by the use of sharp scrapers and burs, and one or more grooves may be

made wherever the plate needs strengthening, for the introduction of pieces of roughened German silver wire.

When the wire shall have been bent and prepared for the grooves referred to, narrow strips of rubber are packed into the grooves with a hot instrument, and the appropriate wire for each groove is warmed and pressed into the new rubber in the groove, the entire surface then being covered, wires and all, with rubber, piece by piece, to whatever thickness necessary, with the hot instrument.

This use of German silver wire in repairing fractured plates is particularly valuable in that it gives the required strength without the necessity of making the plate thick with rubber. Particularly is its use advisable in full dentures if the band be broken above the incisor teeth.

There is almost no limit to the use which may be made of this property of rubber, for it can be stuck to a plaster model with a hot instrument almost as well as to a basis of old rubber.

A few weeks ago a lady consulted me concerning a full upper rubber denture, the front teeth of which were too short, and as the plate had been worn a number of years, the suction was imperfect. There were reasons why it did not seem advisable to make a new plate, and as the lady had an older rubber plate which had been discarded some years before, I suggested that she allow me to experiment with that before doing anything to the one she was then wearing.

I first made a small groove all around the palatine surface near the edge of the plate, and packed into the groove with a hot instrument fresh rubber to form a ridge, or "Folsom," another one being made also around the air-chamber.

This surface of the plate was then invested in plaster and the six front teeth removed and replaced, two at a time, so as to be able to judge of their proper length and contour, the sockets being prepared for new rubber, which was packed in and the teeth lengthened as desired. The plate was then invested and vulcanized.

Although this plate had not been worn for at least five years, the suction was perfectly satisfactory fifteen minutes after it was put in the mouth, and while the "Folsom" ridge made the mouth sore and had to be partially scraped away at points two or three different times, within ten days the plate was as comfortable and as serviceable as a new one would have been.

This result being so satisfactory, the other plate was taken in hand and treated in the same manner except that the "Folsom"

ridge was not made as high, and the lady did not return after the plate was put in the mouth, she sending me a note instead, assuring me that the plate was comfortable and a success in every way.

International.

TREATMENT OF THE CERVICAL BORDER.

Dr. Stafford G. Perry, New York.

In every approximal cavity, in beginning the filling, the end of the plugger forces the gold squarely against the cervical border, and as the instrument is applied at right angles, the gold can be most easily and accurately adapted to the tooth with least force.

As the curve of the cavity is reached on either the lingual or the buccal aspect, this directness of application of force is lost, and this doubtless accounts for the fact that so many failures commence at this point on either the buccal or lingual sides of the tooth. By the time the cavity is about one-third filled and until finished the instrument is packing along the sides of the walls, instead of squarely against them. This natural position is the redeeming feature of the cervical border, and has made it possible for many botch operators to make fillings that were successful at this point. I am under the impression that some operators, appreciating this fact of the square application of the instrument along this border, use thicker mats or masses of gold than they are able to condense thoroughly, even though considerable mallet force is applied. I have repeatedly seen fillings that were solid and fine in other parts, and yet along this border were soft and imperfect. In fact, I think we are all inclined to work too rapidly in packing the gold here, and also that we use the gold in too large masses.

For this purpose I have devised and used for many years plugger-points which are adapted to bring pressure on the edge of the cavity, and which, being made flat on the side which rests against the matrix, insures a very perfect adaptation of the gold. These are made for the cavities on the anterior and posterior sides of the teeth respectively. It is not easy to describe their exact shapes, but I think they will be appreciated when seen.

There has been much said for and against a loose-fitting matrix—that is, one that stands off from the tooth somewhat, so that the gold can be packed a little beyond the cavity, thereby insuring a better adaptation at the edge. There is some reason in this, and yet it may be an open question if the time spent in

finishing such a filling were given to packing the gold in smaller pieces, and with the instrument just described, against a close-fitting matrix, if an equally good edge would be secured.

The peculiar "rake" of these points makes it possible to make a perfect edge if we will be patient and careful. Of course, it is assumed that the matrix is bulged to conform to the natural shape of the tooth. If an equally good edge can be made with a close-fitting matrix, and as quickly, when the whole operation is considered, there is a gain in saving the patient the disagreeable task of trimming the gold, which generally results in disturbance of the gum from the use of files or chisels and the dreaded sand-paper strips. In the early years of the matrix I was shy of it, fearing the making of bad margins; but since having my own plugging instruments, my use of the matrix has increased, while my dependence on the separator has lessened.

A word more now, even at the risk of repetition, in reference to the cervical border. If gentleness and close care in filling characterize our method, and some soft or semi-soft gold is to be our main reliance, then I think we need not cut so radically in the preparation of this border.

Of course, this will be for the purpose of avoiding the encroachment on the thin enamel, and to save the disturbance of the gum, as well as to make the operation easier for both patient and operator, as before stated. If it is said we should not stop short of a radical operation, whatever effort to the operator or discomfort to the patient, if it only betters an operation, then I reply, "Is it a better operation?" When all the conditions are considered, I answer, "I think not." Nature is a safe guide, and I think we work well when we strive to leave a natural condition of the gum and of the teeth at the cervical margin.

It is perhaps a little curious that after the lapse of a quarter of a century I should have to ask for moderation in the application of such a method. But the confidence of youth is beyond belief.

I now come naturally to the consideration of plastics in their relations to this border. And here let me tell you frankly that, for my appearance before you, I selected this subject partly for one particular purpose—namely, to emphasize the danger of using oxyphosphate at this border without preceding it by some insoluble and indestructible substance. Oxyphosphate of zinc has been one of the most valuable acquisitions in dentistry, and it has been one of the most dangerous. I shall feel well repaid for whatever effort it has cost me if I can only succeed in making

a few members of the profession appreciate a little more fully the danger of using oxyphosphate along the cervical border. It may be that it is not generally used in this place, and that my anxiety is unnecessary; but it is my observation that it is generally so used here by most operators in this country and by those who practice abroad, and without being preceded by any other indestructible substance. I am sure there is not one of us who would not to-day be crippled in our practice by the withdrawal of oxyphosphate, and at the same time I believe there are not many of us who fully appreciate its danger.

In the beginning I said that the cervical border was the most inaccessible and most vulnerable of any cavity border in the mouth. If against this border you will use a substance so liable to chemical disintegration as oxyphosphate, you will have intensified the conditions of danger, and though you have delayed the evil hour of the tooth's destruction, you have established a set of conditions that in time will bring it about with almost scientific certainty.

It would not be easy to estimate the number of pulps that have become exposed by the treacherous washing out of this material at the cervical border, thus allowing decay to go on quietly, without giving any intimation of its existence till too late. And the same may be said of the copper amalgam which was so much used a few years ago, and which dissolved at the cervical border in nearly the same manner. It left a dirty trail, and the memory of it is a nightmare. But we are not concerned with it in this paper, and let us hope it is a thing of the past.

International.

KEEP THINKING.

Keep thinking. What is not done with thought comes by chance;—and there are too many possibilities for the best to follow accident. When things may be a hundred ways there is small chance that they will fortuitously be the best. We hope only from design; and there should be as much thought as action.

When one goes not by thought he goes by nothing; and when chance takes him he arrives nowhere. He should not give himself over to nothing, or let himself get out of his own hands. One must think to think, as well as to work; and when he stops thinking what he will think, he stops thinking altogether. Thoughts no more go on without consideration than deeds.

We must think often to get a good thought, and oftener to

get enough good thoughts to count; and we must think on many subjects to think well on one. Too many are thinking for thoughts to have much value unless they are many and strong.

We must look wide around to find anything good, and look wherever openings exist for thought. Life's opportunities lie, like gold, in small crevices which elude careless eyes. The best is generally where none look for it.

Men must look often to see; and they should keep thinking till they view enough things to find the best, which a few may not contain. Great thinkers have most to choose from, and so more chances to get the best; and we should get the best of many things instead of the best of a few. Most that strikes the mind, like most that strikes the eye, is not worth noticing, and we should think often enough to get the exceptional good.

If we have not thought right we should think again, and differently. Few learn to think all the ways they can. The man of many kinds of thought is the successful man. Thoughts too much alike count for but one, and we should not only keep thinking, but change thinking. To think always the same is to stop thinking, variety of thought alone being thought. Thinkers are all original thinkers, whereas repeated thought is thoughtlessness. A world of great variety cannot be disclosed to thoughts of much similarity.

He never does better who always does as he has done; and if he finds nothing new he should find new ways of thinking. As all want something else, they should do something else. Men may not do what they have done if they want what they have not.

We are measured by the height to which our thought rises. To think is to be most of a man; and we should live chiefly in his head. Since everything issues from the brain, it should be made right there.

We must think that we may think. One thought follows another, and some thoughts are not possible till after others; and if the first do not appear, the latter do not come. Thought runs through time, and must be long, as well as constant, to reach full proportions. We need trains, as well as single thoughts, and should complete the series. Each thought suggests more, and should be followed as far as it will go, and exhaust our capacity as thinkers.

Men think little till they think in the consequences of their thought; and in going farthest in thought-implications they get most of the world. For we take up into ourselves as much as we know, which alone we use. The thinker is master from the mere

fact of having a thought, which is complete only on achieving a success in some result. For thought turns to action before reaching its consummation, and attends that action to the realization of the ideal.

Few think all the time, or all they can. There are lazy thinkers as well as lazy actors. Some think one thought a day, and spend the rest of their time working on it. Some think only in youth, and keep the opinions then formed for subsequent rumination. The successful are they who keep up their thought through life, and often think to their greatest depth.

Only by thinking are we resolved into power. Our energies then go to the head and heart, and we are set into action; whereas without thought our forces slumber, and produce but waste.

We should be alive as long as we can, and as much alive as we can. He lives most who thinks most, and lives longest who thinks to most purpose. We should not too early make acquaintance with death; and stagnation is mild death.

We should learn to think through our whole mind. By getting all our thoughts at work we are doubly thinkers. The greatest power of thought is far from the lowest, the measure of a man being a long one. Ability to use the whole mind is rare, whereas all the mind, like all the lungs, should often be called into play. Consumption of intellect comes from inaction of parts of it. One knows not how large he is till his mind rises to its full height.

We should not only think at our best, but think often at our best. Success depends on the amount of mind put on projects, and we should learn to be habitually great. The power to do our best is the condition of success, and especially to keep long at it. We never do our best at once. He who can work through time is the great accomplisher. To be a great man longest is to be the greatest man. Magnitude runs through time as well as space.

We should take time to think. Many fail to do this because they are always working. We cannot be too busy to think, but should be most busy in thinking. We always have time for the most important, which is head-work.

Instead of beginning a second task when one is done, we should think between efforts. We cannot do our intellectual best at one thing any more than at one time, but must take in its relations for great thoughts.

We should think hard enough, often enough, and long enough to devise all of which we are capable. Neither capacity nor time should be wasted. If we did more thinking we might

do less working. For thought often does our work for us, or dispenses with it.

We should occasionally go apart to ourselves and call up all of ourselves. Only when alone have we the company of the whole world, and we should learn to turn into moments of all thought, and be often at our greatest.

We should compel ourselves to think. Few incline to thought spontaneously. We must force ourselves into our highest altitude, though climbing is irksome. Getting control of what starts thoughts, we should keep them going. The intellect must be backed by the will. When mind stops, man stops; and only in needed rest and sleep should we consent to be nothing.

Especially should we compel ourselves to think great things, and to persist therein. This is necessary if we do them. We should learn to start up, to start hard, and to maintain speed. The time we can keep at our greatest is the measure of our ability, and our power to force this condition on ourselves determines our efficiency. The best of a man should do what he has to do, and he should make all of himself available. To turn a whole man into something is to make a great result.

Austin Bierbowyer, in Success.

TO MAKE A DUPLICATE OF A DENTURE.

Dr. Ellison Hillyer, of the New York College of Dentistry.

To make an exact duplicate of a full denture of vulcanite.

1. Cleanse thoroughly.
2. Cast the model upon the palatal portion of the plate, not necessarily extending posterior to the condyles—(oiling the plate is unnecessary).
3. To duplicate the "fullness" of the lateral portions and the mold and size of the teeth, cast two sections of plaster extending (a) from condyle to median line, and (b) from median line to opposite condyle, and from the base of the model to the cutting-edge of the teeth. (When plaster comes in contact with plaster, Oliver's separating fluid—or other—may be used.)
4. To duplicate the exact thickness of the denture, cast the lingual portion, extending from condyle to condyle and covering the lingual surface to the edge of the cast, labial sections (a and b) extending thus over the cutting-edges of the teeth.

With these four parts "set" and removed, the teeth may be selected to fit the labial molds—proper shade—and ground ex-

actly to fit; then set up and waxed upon the model—the labial molds being in position relative to the model—the thickness of the wax determined by the lingual cast in its proper relative position. When vulcanized and finished, an exact duplicate should result.

Dr. Wilbur F. Litch, of the Pennsylvania College of Dental Surgery, says that to make an exact duplicate of a full denture, either with or without the patient, would be practically impossible. To produce an approximately exact duplicate in the absence of the patient, run plaster into the plate to make a new cast. If there should be so much undercut that the cast cannot be separated from the plate without breaking, run the cast in sections, then to be firmly joined together for working purposes.

Placing upon the cast thus obtained the denture to be reproduced, run outside of it and the cast a plaster matrix in two or more sections to serve as guides for fullness and contour, length and position of the teeth.

Make the "bite" of a fusible alloy melting at about the temperature of boiling water; this can be run upon the grinding and cutting-edges of the teeth without danger of fracturing them, and mounted in a suitable articulating frame—Bonwill's preferably—can then be used for mounting the teeth as would the ordinary plaster bite, with the advantage that it cannot readily be broken, and will not rapidly wear away in the prolonged grinding which would be required to procure an exact reproduction of the grinding and incisive edges of the denture to be duplicated. Teeth made in the same molds as the originals would probably be necessary.

Dr. Robert H. Nones, of the Medico-Chirurgical College of Philadelphia, maintains that it is not possible to make an exact duplicate of a denture, from the fact that the contraction and expansion of materials used in cast, die, and plate all operate to make slight changes; however, assuming that it is a denture mounted upon vulcanite to be duplicated:

1. Wash and scrub the plate with dilute ammonia water to free it from grease and other foreign material.
2. Slightly, very slightly, oil all of the surfaces of plate and teeth with olive oil.
3. Pour a cast in the palatal portion of the plate one-half inch thick, or more, and have it project beyond the edges of the plate all around. Smooth this cast and varnish its outer walls, in which three or more conical depressions are made above the plate-rim edges.

Remove plate from cast and set it back. Form a plaster wall over one-quarter inch thick about the outer sides of dentures and outer wall of cast. Place cast and all in an articulator, and run a plaster mold over plate and occlusal surfaces of teeth. Lock the articulator jaws firmly. When the plaster is hard, separate jaws of articulator, pry off the outer plaster walls. Select a set of teeth exactly like the others, and set them in the outer plaster walls. Make a base-plate of wax, put walls and teeth in position, and press softened wax beneath teeth until they are firmly held. Add more wax, faintly oil the plaster mold of the occlusal edges, and press the articulator jaws in position. See that each tooth fits exactly into the two plaster guides. Next, finish waxing, invest, pack, vulcanize, and finish. The inevitable shrinking of the vulcanite will make the second plate slightly different from the first plate.

Dr. George H. Wilson, of the Western Reserve University, Cleveland, Ohio, says that after giving the plate and teeth a thin coat of oil, fill, making the plaster cast. With the plate upon the cast, attach to one jaw of the articulator; set the other jaw of the articulator about one-fourth inch from the teeth; mix plaster stiff enough to stand without flowing, spread upon the occlusal and incisive ends of the teeth, overlapping the buccal, labial and lingual surfaces about one-sixteenth of an inch; place the articulator in position and unite with plaster. When the plaster has hardened, open the articulator and remove the denture; place base-plate wax upon the cast, with a roll of wax upon the alveolar ridge; set duplicate teeth in imprints of teeth upon opposite jaw of articulator; close articulator, forcing the cervical ends of the teeth into the wax roll; with hot spatula unite teeth and wax roll to base-plate. After cooling the wax, trim the plaster away from the buccal and labial surfaces of the teeth; open the articulator and build the wax plate to contour. Now remove the lingual portion of the plaster imprint of the bicuspid and molars; close the articulator, proving the articulation. Now the case will receive the ordinary manipulations.

If the case is a metal denture, it will be necessary to make two casts, one to be used as a model in producing the die.

Dr. R. R. Freeman, of Vanderbilt University, gets accurate casts from upper and lower plates. With plates on casts, occlude and adjust according to the Bonwill rule, on a Bonwill articulator. Remove plates, run additional casts sufficiently thick and slightly expanded at base for countersinks; place each on level plane, plates on casts. Invest teeth in plaster, two sections, ex-

tending from plane up over teeth, dividing at median line. Having soaped, your plaster will separate readily where desired.

Separate sections, remove plates, adjust base-plate of wax on cast, and replace sections. If you have duplicate teeth, they may be readily adjusted to position in tooth impressions left in sections; otherwise make best selections you can and wax up. Remove these wax plates with teeth arranged to the casts in articulator for more accurate occlusion.

Return to your duplicate casts, wax to a finish, trim casts, flask, etc.; after vulcanizing and finishing up plates, to be certain beyond question that your occlusion is same as original plates, take casts from duplicate plates; on these casts adjust wax plates, transfer to original casts in articulator, build up at right length, fasten wax plates together, and in these place the duplicate casts, and adjust by Bonwill rule in Bonwill articulator.

Remove the wax base-plates, substitute the duplicate plates, and do such grinding as may be necessary to perfect occlusion, and you will have an exact duplicate of your full denture.

Cosmos.

EXPOSED PULPS.

Dr. Patterson: Pericemental inflammation, after pulp removal, can always be avoided by removing the pulp by surgical methods. Cocaine can be forced into the pulp until it is completely anæsthetized, using very finely pulverized crystals of cocaine. With the chloride of ethyl spray the pulp can be so congealed that cocaine can be forced into it by means of pressure with spunk, cotton or unvulcanized gutta-percha. The pulp can then be removed absolutely without pain.

Dr. Taft abandoned the use of arsenic twenty years ago. Its effects are objectionable, not only upon the pulp itself, but by extending to other tissues. The results are too uncertain. With the increase of facilities, other methods are so efficient that there is no longer any excuse for its use. Cocaine, finely pulverized and dissolved, is readily taken into the pulp by absorption, until it is so anæsthetized that it can be removed with as little pain as a paring from the finger-nail. When the pulp is removed by surgical procedure and all soft tissues removed from the canal and hemorrhage arrested, then is the time to close it. Seal it up immediately, and there is no liability of any changes pernicious to its welfare.

Dr. Watkins prefers, when he has a large cavity with free access, to punch it out with a slim piece of orange wood. It is

instantaneous, the pulp is removed entire, and the tooth is ready for filling.

Dr. Barrett: Those who oppose arsenic as a dangerous drug, advise the use of cocaine! Which is the most dangerous? It is "jumping from the frying-pan into the fire."

Dr. H. B. Smith: The surgeon who uses cocaine knows the liabilities. He is prepared to combat evil effects, which he knows how to counteract. The trouble with arsenic is, that we do not know how far-reaching its effects may be in any case.

Dr. Crawford spoke of the importance of preventing septic infection (which he prefers to call toxic invasion) by stopping each root as soon as the canal is emptied, not leaving it open to serve as a means of self-destruction, while operating in the other canals.

Ohio Journal.

PREPARING A CAVITY.

The late Dr. Benj. Lord, New York.

For instruments in preparing the cavity I depend largely on what is known as the hatchet excavator. The blades, of course, must be of different lengths and widths and curved at different angles, some having also a slight bend in the shank. Some are wider at the cutting edge than at the angle of the curve, others have the sides or edges parallel, and some of both these classes should have one or both corners ground off so that the cutting edge would be rounded. Then I use a cutting instrument of a peculiar shape, which is most effective on the labial and buccal surfaces, and on the approximate surfaces where the spaces are considerable.

This instrument is specially adapted for preparing and shaping the walls or sides of the cavity, and is not intended to be used on the floor of the cavity.

I use burs very little except to open crown cavities and dress margins, the proper preparation of which I consider of the greatest importance to the accuracy and success of the fillings.

I have, as can be seen, instruments cut much as burs are, for dressing away the edges of the cavity, after the removal of the decay, and for giving the cavity a proper shape, including a slight undercut.

These instruments, if properly used, take away all decomposed structure and very thin edges, leaving margins of a thickness not likely to be crushed or powdered in any part of the ope-

ration of filling. Then I use a suitable instrument to give the edge of the cervical wall a slight bevel outward, so as to bring the filling slightly over the margin of the cavity. I would also thus bevel other margins that are thin.

The dental engine is used very often to the destruction of healthy tooth-structure and the marring and notching of the margins of cavities. It is unquestionably a very useful appliance, and it is also a very harmful one when used improperly or where it ought not to be.

International.

NEW TELEGRAPH TYPEWRITER.

A new invention in telegraphy, which promises a revolution in the telegraph business of the world, has been perfected. It can be attached to any typewriter of standard make and having the universal keyboard. A message written on a connected typewriter is reproduced on the typewriter, similarly connected at the other end of the line, the operator controlling the distant typewriter synchronically with the machine he operates, even to the shifting of the paper and carriage. Messages may be sent and received by the same machine, and any number of machines on a circuit may be operated simultaneously from one machine, or certain offices may be cut out at the will of the operator by means of a new and simplified form of switchboard.

Based as it is upon a new principle, which does away with the dots and dashes of the present code, all danger from wire-tapping is removed. The principle rests upon the combinations made possible by the use of four magnets, by which the keys of the receiving typewriter are operated through the energy set in motion by the operation of the keys of the sending typewriter.

Science News.

A HANDY BROACH.—Take a piece of fine piano wire of length to suit, flatten one end with a file, clamp it in your vice firmly, flat end up, take a small, sharp, coal chisel and nick the end gently; now place in pin-vice or pliers and work it down around the nick evenly with your file, finishing on lathe stone (run backward) until you have a slender broach with a tiny fork on the end—microscopically fine, if you wish. The temper is just right, and by dropping a little hot gum shellac on the butt end

and molding it into a handle, with moistened fingers while just plastic, you have a broach which will carry shreds of cotton to a root's end and leave them there.

I make handles for all my broaches in this same simple way, cutting them off first to any desired length, and find them unexcelled for entering molar roots,—even those pointing backward. One can twirl these handles between thumb and finger in places where even a G. G. drill in a right angle would be ineffective.

J. E. Waterbury, D.D.S., Holley, N. Y.

DR. BLACK'S THEORY.—Dr. Black says that all teeth are equally soft; that the dentine of all teeth is the same in density; that they have the same specific gravity; that a good tooth is no better than a bad tooth; that any filling-material that will save one tooth will save any other, and that there is no choice except on the part of the dentist between lead or tin or gold or amalgam. Well, now, I do not believe that bad teeth are always bad. I do not believe that teeth that are bad in the beginning are bad all through life. I am honest in being mistaken, if I am mistaken, but I believe I have seen changes in the teeth of some of my patients. I call to mind a patient who for ten years suffered from caries of the teeth. He was then leading a sedentary life. He changed his occupation, becoming a railroad man, thus securing plenty of air and exercise. His teeth before required constant care. Now he will go sometimes for five or more years without a single cavity in his teeth. He is an unprofitable patient because his teeth do not require any care. Dr. Black would say that they could not change for the better.

Dr. Edwin T. Darby.

CEMENT FOR RUBBER ON METAL OR WOOD.—The following, from a German paper, is said to make an excellent cement for bicycle tires, and it may prove useful: Put one part of shellac, broken into small pieces, into ten parts of strongest ammonia water, and set it aside for three or four weeks, or till the mass becomes entirely fluid. In use the liquid is applied to the india-rubber surface and the latter applied to the metal or wood and firmly wired or corded thereto. When the ammonia has evaporated, a complete joint is formed between the two surfaces.

Some dentists have a place to eat and sleep, but no home; they have an office in which to work and worry, but no cheer; they have a social standing in society, but no real enjoyment.

What is life to such a man? Though he have money, and business, and friends, and even public honors, all are mockery if there is no "love at home," and no lovable disposition to enjoy society? Life is not worth living if we have lost the ability to receive and to scatter love along our path. But if sweet amiability abounds how our heart is attuned to delightful music, and the soul responds to the delicate and delicious touch of friendship.

Man cannot live in and of and by himself; he seeks happiness outside himself, and even in his passions is still seeking God, since God alone can satisfy his soul. Progress, rightly understood, is no other thing than man's pursuit of the ideal, which ultimately is God. It is the passion of generous souls, noble hearts, great intelligences, and it makes man great in every sphere and department of life. It is the ideal which makes immortal poets, profound philosophers and heroic saints. It is the most fascinating of all thoughts, of all ideas, and is peculiar to our age, not in the sense that it is new, but in the sense that it has become its leading, all-absorbing and absolutely preponderating thought.

FROM CENTIGRADE TO FAHRENHEIT.

From Centigrade to Fahrenheit,

'Tis easy to divine—

You first must use arithmetic

And multiply by nine.

The answer now divide by five,

And then you have in view

The very number that you seek

By adding thirty-two.

From Fahrenheit to Centigrade,

However, it is plain—

You first must take the thirty-two

And multiply again;

But this time only by the five,

And then you draw a line

Straight up and down, in order that

You may divide by nine.

Dietetic Gazette.

PRACTICAL POINTS.

By Mrs. J. M. Walker, Bay St. Louis, Mississippi.

Trichloracetic Acid in the Treatment of Pyorrhea Alveolaris.—I use a 2 per cent. solution, getting first an astringent effect, preventing much hemorrhage, and second, an anæsthetic effect. Use on a few shreds of cotton wrapped on a scaler and left in place for a short time. Deposits are removed with less pain than by any other method tried.

Dr. E. MaWhinney, Dental Review.

Eucaïne.—Eucaïne provokes hyperemia at the point of application, and should be used with caution when hemorrhage is to be feared. Five minims of a 10 per cent. solution are sufficient to inject into the gum for the painless extraction of teeth.

Wolff, Dental Digest.

Gold Crowns.—Stamp cusps of thin soft platinum, trim to size and articulate. Melt full of gold scrap of any desired grade. The platinum color will disappear, while the shape of the cusps remains intact. If any platinum appears to be exposed, remove in the finishing process.

R. E. Sparks, Dominion Den. Jour.

Treatment of Decalcified Dentine in Bottom of Cavity.—

Apply sufficient oil of cassia to permeate all the softened dentine. Dry the surface with chloroform; fill with aristol and chloro-percha, which becomes hard and glassy when the chloroform has evaporated. Finish with cement.

R. H. Cool, Pacific Gazette.

Porcelain Molars in Bridge-work.—In all suspended gold crowns, having reinforced the shell crown, select suitable porcelain teeth and wrap with thin sheet platinum, first coating the platinum, inside and out, with flux. Place small bits of 22k. solder liberally in the crown and insert the platinum-wrapped porcelain; direct the flame to the bottom of the investment. This fills the great desideration—economy of gold with minimum weight, without impairing strength of bridge.

I. A. Chapple, Am. Den. Weekly.

To Remove Plaster from Vulcanite Plates.—Immerse plate for a few minutes in hydrochloric acid.

Dr. Wright, Pacific Gazette.

Cleaning Teeth.—Add peroxide of hydrogen to ligated pumice, to consistency of cream. Apply to teeth by means of a twist of cotton on the end of an ordinary toothpick. Remove with small brush wheel in engine run at high speed.

Wallace Wood, Jr., Am. Den. Weekly.

Soldering Gold Crowns.—Make a saturated solution of borax by boiling until no more will dissolve. When the solder is wanted to flow, moisten with this solution, and it will run like a flash. Mix yellow ochre to a creamy consistency for painting the parts to be protected from solder. *John T. Usher, Dental Cosmos.*

Clean Flasks.—Put a coil of sheet zinc into the water in the vulcanizer, and it will prevent the formation of much of the black oxide which forms on iron flasks. After using a few times, the flasks will soil the fingers but very little.

Western Den. Journal.

Cataphoresis—Leakage.—Avoid the use of ligatures in applying the rubber-dam, as unless they are steeped in melted wax or thoroughly saturated with chloro-percha, they become the means of conveying the current to some point where there is gum contact, thus causing leakage. Oxyphosphate, mixed to a creamy consistency and poured around the margins and upon adjoining surfaces, forms a box cavity which is thoroughly insulated.

W. V. B. Ames, Dental Review.

Relief of Pain.—The suffering attendant upon many dental operations may be greatly mitigated by the exhibition of anti-kamnia. Two five-grain tablets, crushed, will generally be found efficient.

Silver as a Base Plate with Rubber Attachments.—A silver plate coated with mercury and covered with gold foil, to absorb some of the mercury, gives entirely satisfactory results, overcoming the affinity of silver for the sulphur in the rubber.

John T. Usher, Dental Cosmos.

Tincture of Iodine for the Removal of Deposits.—Apply the dilute tincture freely to teeth and gums, which will constrict puffy gums, drawing them away from about the teeth and outline deposits, which might otherwise escape detection. It loosens deposits upon the teeth, insinuating itself into minute crevices and rough areas of the crowns. Follow the iodine with ammonia, which forms a colorless solution, leaving the teeth much lighter in color. Clean and polish the surfaces.

Dr. Register, International Den. Jour.

To Obtain a Metal Impression of a Tooth to be Crowned.—

If the tooth has a large cavity, fill with wax, and have the patient bite to get articulation. Trim to proper shape. Take plaster impression, and make plaster model. Cut off the tooth to be crowned. Pour Melotte's metal in the rubber ring, and before it sets place the plaster model of the tooth to be crowned cusps down in the metal. You will then have an exact impression in which to stamp gold crown.

Chas. H. Sciver, Items of Interest.

Contouring.—Tooth form should be held secondary to the contouring of the interproximal space, the guarding of which should be the first consideration. The form of the tooth, or even its full occlusion, is of less importance. The health of the tooth and its surroundings is the first consideration.

E. V. Black, Dental Review.

Bridge-work Without Display of Gold or Pulp Devitalization in Anchorage Teeth.—An ordinary plate facing is backed in the usual way, and soldered to an iridium, platinum wire previously bent and fitted into slots in the adjoining teeth. Set in cement, and strengthen by building over the anchorage wires with cohesive gold.

Arthur G. Smith, Dental Review.

Zinc Sulphate in the Treatment of Pyorrhea Alveolaris.

—After thorough cleaning of pockets and roots, warm beeswax in warm water, and incorporate zinc sulphate to form a paste, with which pack the pockets. As the pockets fill in with granulations from the bottom, the plug is forced out.

Dominion Den. Jour.

Sterilizing Instruments.—Dipping in alcohol and burning off the alcohol effectually destroys all virus or germs. The heat reaches the whole surface of the instrument.

Faneuil D. Weisse, Dental Cosmos.

Removal of Iodine Stains.—A solution of hypo-sulphate of sodium will remove iodine stains from clothing or skin.

J. G. Emmerling, Dominion Den. Journal.

Bleeding Gums.—To obviate bleeding of the gums in crown- and bridge-work, apply a 25 per cent. solution pyrozone. This acts as a styptic, one or two applications rendering the gum perfectly dry for from ten to fifteen minutes.

Conrad E. Wittlauffer, Den. Practitioner.

For Warts.—Touch with acidum nitr-fum and immediately afterward with acidum carbol. pur liquif. There is a strong chemic action, the effects of which penetrate deep into the tissues and completely and permanently cures warts, etc.

Lanbenburg, C. Ol. f. Chir.

ITEMS.

Possibly I have been a crank on trying to save exposed pulps by capping. I lose very few unless caused by ill health of patient. In a healthy person they are not liable to result disastrously unless the person becomes ill, and then look out for dead nerves. My plan is to cap all nerves, and if they fail, extract them.

Luella Cool.

By a purchase of a half barrel of plaster lately, I am reminded there is quite a difference in this material, not only in quality, but quantity. Being surprised at the smallness of my half barrel, I made inquiry and find some dealers half barrel weighs 150 pounds, and others only 120 pounds. This is worth knowing.

S. C. Slade.

In attempting to extract an upper left first bicuspid root a prominent dentist recently met with an accident previously unheard of by me. The third molar and second bicuspid were in situ, the first and second molars had been removed some years previously, and the alveolus had been rapidly reabsorbed. The roots of the first bicuspid had been broken off high up above the gingivæ, and in attempting to force it out the entire alveolar process surrounding both bicuspids was fractured.

Dental Century.

DENTAL MAGIC.—“Do you remove obstructions from the throat?” inquired an elderly lady caller whose physician was “not in.” While in the dental chair she was so distressed that an examination was impossible. I applied a cotton swab of cocaine solution to the region of the throat. My idea was to quiet the muscles. Effect was unexpected; for the retching became worse, and she coughed up a common pin. The lady was delighted over my skill (?). I was delighted that the “pin took an upward course.”

C. F. M., Detroit.

SECURING IMMEDIATE SUCTION IN DENTURES.—The plate is moistened, and then simply sprinkled with fine powder of gum tragacanth. The plate is then pressed in place, and however good or bad a fit, it will hold firmly for a day under almost any use or abuse. The advantage of this will be apparent to any one; for the first half-hour or few minutes after a plate is put in for the first time makes or mars the reputation of the dentist, for the

time being, in the estimation of the inexperienced patient, whose efforts to "suck up" a plate, if not immediately successful, are at once discontinued, the plate is taken out, and the invariable remark it, "It don't fit."

A patient will bring a rickety, ill-fitting plate, and after being without it the few hours necessary to repair it, will insist that the plate fitted perfectly before it was confidently submitted to our care, but now it feels as though it had been made for another party. A thin coating of tragacanth will even up all irregularities, soothe the wounded sensibilities of the patient, and prevent the plate's wounding the sensitive membrane of the mouth.

Dental Weekly.

An easy and quick way to replace a broken tooth in a rubber or celluloid base, is to remove all pieces of tooth and pins, cut retaining form where pins were, with the engine bur, place the new tooth in position and stick it to the approximating teeth by placing sticky wax over the labial surfaces. Then fill retaining form and around pins of the new tooth with amalgam. Leave wax in place until amalgam has hardened.

F. H. Hood, in Ohio Journal.

The use of ice in small quantities, frequently repeated, is very general in many diseases, but it is found difficult to keep it from melting, especially when in small blocks. To keep it from melting the ice should be put in a vessel and covered with a plate, and the vessel should be placed on a feather-bed, and covered with a feather pillow or cushion, feathers being almost non-conductors of heat. By this plan a few pounds of ice can be kept for several days, even in summer heat.

Self-Culture.

TREATMENT FOR EXPOSED DENTIN.—Sometimes, when much absorption of the gum has taken place, the tooth becomes very sensitive to changes of temperature. The following method has lately been recommended to guard the tooth from thermal changes: A gold plate is fitted over the exposed fangs, a model being first taken, which is pared away at the neck of the teeth so that a band would fit beneath the gum. Chloro-percha is painted beneath the gum and the plate fastened with a pin and cemented the same as with a crown. The relief has been found immediate, though before the plate was put on the patient could not bear either hot or cold water in the mouth. The tooth has remained quite well, and is doing good service. In another case the symp-

toms were the same, but complicated by decay on the distal surface. The cavity was filled with artificial dentin, then a split band was fitted around the tooth, which was tightened up by a screw when in position. This case has proved equally successful.

British Journal.

PAY PROMPTLY.—An important point in building up a business is to get a reputation for prompt pay. That's a big advertisement in itself. If you can pay cash for everything you buy, you'll get the best, and you'll get it cheaper than the thirty or sixty days' man could. People will be glad to deal with you, are sure to talk favorably of you, and you'll get plenty of first offers or "options" on goods that credit men would not be asked to buy. The big businesses that have been built up in this and other countries were chiefly started and managed on the above lines.

John C. Graham, in Printers' Ink.

DR. E. DETREY'S "SALILA" GOLD.—It seems to us that Dr. E. DeTrey's "Salila" Gold must almost revolutionize operative dentistry. At the first demonstration I saw, it seemed there must lie some magic in the hands of the operator. Surely it was not possible for gold to be so manipulated as we were shown it could be done, yet upon trial and practice I find it is something that to my mind is to rank as one of the greatest boons to dentistry. Dr. DeTrey has devoted twenty years to experimenting and research while endeavoring to perfect this gold, and how well he has succeeded you should learn by a trial, for it seems to me he has left nothing to be desired.

Dental Century.

A CASE OF PHOSPHOR-NECROSIS OF A HEAVY SMOKER RESULTING IN DEATH.—Patient, a tailor of good health and moderate habits, except excessive smoking of cigars. He uses about 20 cigars in a day and about 15 to 20 lucifer matches for every one, as he frequently interrupts the smoking during his work. For the last twenty years he inhaled the vapor of phosphorus of a daily consume of over a hundred matches. Patient first noticed pain in the right eye, swelling followed, involving the whole side of the face. An abscess in the oral cavity yielded a free flow of pus by opening it up. Patient grew worse, the superior maxilla was finally removed, as diagnosis showed it to be phosphor-necrosis. In a few months a new operation was necessary, but the patient collapsed, dying in delirium of meningitis.

Ohio Journal.

A meeting of the Massachusetts Board of Registration in Dentistry, for the examination of candidates, will be held in Boston, December 5th, 1898, at 10 A. M., at Harvard Dental Infirmary, North Grove street. Examination in operative dentistry at 11 o'clock.

Each candidate must come prepared with rubber-dam, gold and instruments, to demonstrate his skill in operative dentistry. Any one who wishes may bring his patient. So far as possible patients will be furnished.

The theoretic examination will include anatomy, physiology, histology, chemistry, pathology, materia medica, operative and prosthetic dentistry, mechanical dentistry, therapeutics, surgery and metallurgy.

All applications, together with the fee of twenty dollars, must be filed with the Secretary of the Board on or before November 28th, as no application for this meeting will be received after that date.

G. E. Mitchell, D.D.S., Sec., 25 Merrimack St., Haverhill, Mass.

The Missouri Dental College, Dental Department of Washington University, St. Louis, began its thirty-third annual session on Monday, October 10th, at 9 A. M. The following number of students being present on the opening date: Seniors, 31; middlemen, 34; juniors, 41.

Besides the regular faculty instruction, arrangements have been made for special courses of lectures and demonstrations during the session by Prof. Edward Angle; on Orthodontia and Porcelain Art, by Prof. John E. Nyman.

The Louisville College of Dentistry opens its thirteenth annual session January 2d. Last year there were one hundred and sixty-nine students enrolled, and fifty-one received the degree of D.D.S. The attendance for the coming session promises to show the usual increase of students.

During the summer the interior of the large college building has been remodeled so as to give fully double the former clinical facilities, as this branch of instruction is given special prominence. The date of opening, January 2d, affords an opportunity for those students who applied to the Fall schools too late to be received, to enter the Louisville College, instead of waiting another year to begin or continue their dental education.

The Indiana Dental College opened on October 4th, and there were 56 seniors, 66 juniors, and 66 freshmen matriculated.

EDITORIAL.

INCIPIENT DECAY.

Both among patients and dentists, it is sometimes a question whether incipient decay should be interfered with. Both are apt to look on the most extensive decay as that which should receive first and most thorough attention.

If there must be a discrimination, I would advise, by all means, that the worst teeth be left to rot, while those which can be most cheaply and easily and surely saved should receive our first and best attention.

"Doctor, please look at my teeth, and tell me what work is really the most important. I can't endure or afford to have much work done; but I suppose there is some that must be attended to."

What dentist has not been accosted somewhat in this manner? And how many dentist forthwith, "and, of course," begin to hunt for the teeth nearest destruction.

We admit it would be hardly right to neglect the worst decayed teeth because of the extra time and pain and expense attending their restoration; but really, if any must be neglected, would it not be better to let these go to the spittoon while we give attention to those more easily restored to a healthy condition?

We know, too, that the neglect of the worst jeopardizes the least affected. But we are not advocating the neglect of any. We believe the dentist should be thorough with all, and condemn none that by any fair means can be restored to health. But we do say it is of the utmost importance for the safety of all, to see that incipient decay be as thoroughly and promptly treated as the most advanced caries.

And this should be impressed on the attention of the patient. It should take but little time or argument to show them that decay in one tooth must injure others, and that incipient or superficial decay is much easier removed than if allowed to become

deeper-seated. I have often prevented much decay, suffering and expense by removing slight attacks of decay, and then thoroughly polishing the affected surface, especially approximal surfaces and softened spots near the gums. A judge came to me once with decay between every one of his upper front teeth. "Ah," said I, "you are just in time. I can remove every decay without leaving a single cavity to be filled." His teeth were quite crowded. I separated them with rubber and then filed the approximal surfaces until the decay was entirely obliterated. I then polished and hardened them, and giving him an old worn-out separating file told him to once in a while, by and by, to pass it over these surfaces. He had also softened surfaces along the margin of the gums, which I treated in the same way. Many years afterward he came back with these teeth still free from caries, saying, "I have all these years been my own dentist by the use of that old file." Perhaps I ought to have told this in a whisper; for our modern scientific brethren will very much disapprove of such a course. And I must myself admit it would not do for common practice. But I do believe many a softened surface next to the gums, and superficial cavity, might be treated without the necessity of a filling. It may well be called preventive practice; and prevention is better than cure.

I was once working on the teeth of the wife of a noted lawyer, when I discovered what seemed to be but a slight decay on the posterior approximal surface of the lower first bicuspid.

"Well," said she, "I shall be here again in six months. I'll risk it till then."

"I think that will be all right," I replied; "and so of these three or four other superficial decays, I have attended to the most important."

Eight or nine months after this, she came in to say there was an uneasy sensation in this bicuspid. A month later I looked over her teeth again, the bicuspid among the others.

"Nothing serious," said I, and after attending to three or four other small decays, came to my old friend the bicuspid. It was so crowded, I worked a piece of rubber between and made another appointment. To my astonishment, I found the pulp ex-

posed, and that in the second bicuspid nearly so—all this without more than the casual appearance of superficial decay. That taught me a lesson for the future. It was three months before that tooth was dismissed, and even then to give occasional trouble.

DOING OUR WORK WELL.

Doing our work well is of the first importance. Never mind the necessity of doing it slowly, or doing it over, or doing it for a small compensation. Do it well or not at all. Let rapidity come with acquired skill whether it be a work of thought or mere muscle, of careful planning or of trivial importance; allow nothing to cause you to slight your work. Be persistent and precise in every part and detail. Even this may not be sufficient. What has been done may have to be thrown aside as useless. Better that than be satisfied with a poor job. Try again and again, till you can make no further improvements, and till you are satisfied it is well done. But after all it is not for the perfection of what you are doing that should be your main aim, but the perfection of yourself in the doing; for in doing well everything you undertake you are attaining a skill and an intelligence for doing quickly and successfully whatever follows.

For two terms I had studied algebra, without learning algebra. A visiting gentleman at the academy, said to me:

“Do you understand the lessons you have been over?”

“No; I do not understand them,” said I.

“Come over to my house this evening, and we will see what we can do.”

Taking me back to the first principles, we went over them carefully, one by one, till I knew them thoroughly.

“Now,” said he, “come again to-morrow night.”

In three nights he had brought me up to my present lesson with that thoroughness of detail and familiarity of underlying principles that enabled me to go on with the class easily and pleasantly.

There are too many bunglers in business. They would be far better workmen if they would go back to their tutors and be

scholars again. On this account our Post-Graduate Schools are of great importance.

In surgery and medicine there is much bungling and ignorance where there should be skill and profound learning.

A gentleman dislocated his hip. A neighboring physician could not reduce it, because he did not properly know his business. Two others were called in with no better result.

"Oh," said one of them, after they had almost murdered the man, "send for Dr. Murray; he will reduce that dislocation in fifteen minutes."

As soon as a good horse could travel that seven miles and back, Dr. Murray was there. The messenger had informed him of the condition of things; so, without waiting for an introduction, he passed the three doctors and entered the room to the agonizing patient. By one dexterous movement, before they had time to reach the bed, the dislocation was reduced, and the surgeon was turning to leave the house.

Not realizing what had happened, they tried to stop him for an explanation why he did not do something. But he simply remarked:

"Gentlemen, I can hardly stop to explain now. Call at my office, and we will talk it over," and away he sped, leaving them, as they supposed, to do the work they had called him to do. They were astonished when they found the dislocation reduced, and the patient entirely easy. They were still more astonished, some time afterward, when his bill of two hundred dollars was cheerfully paid Dr. Murray, and theirs of only ten dollars each was refused.

"A DAY'S MARCH AHEAD OF WANT."

We believe, with Horace Greeley, that every healthy young man in this country ought to be ashamed of being poor. We would like to fill every young man and woman with an utter dread and horror of poverty. We would like to make them so feel its shame, its constraint, its bitterness, that they would vow to escape its thralldom. No young man has a right to remain in a position, if it is possible to get out of it, where he will be con-

stantly subjected to the great temptations of poverty. His self-respect demands that he should put himself in a position of dignity where he will not be liable at any time to be a burden to his friends in case of sickness or other emergencies. Without independence, no one can be a man. No man can do his best work who feels want tugging at his heels, who is forever tied down and hampered, at the mercy of circumstances, or of those upon whom he depends for employment. What can be more humiliating than a sense of being but a day's march ahead of want?

Parents often fail to realize the significance of their children's ambition to earn money. It is a laudable ambition, and should be directed and encouraged, not suppressed. Thousands of boys have been saved from utter worthlessness to lives of splendid usefulness by wisely encouraging and fostering this money-making instinct. If a boy be thoroughly honest in his desire for money-making, he is sure to be saved from a thousand temptations and habits of indolence or wildness, and to develop habits of thrift which will influence his entire life.

If the man is a man, and his fortune be fairly won, it will increase his influence and multiply his power. This struggle to attain wealth, if he is careful to guard against its dwarfing influences, will develop his intelligence, his skill, his energy, his thrift, his sagacity. It will improve his judgment, increase his practical knowledge, and train his moral and intellectual powers to a higher cultivation.

Be always looking out for new things, but keep clear of sharks. Do not refuse to examine what is new because it is new and novel, and a little intricate, but look out for sharks. Improve golden opportunities—they will be the making of you—but don't get bitten by the sharks. Run the moment you see them. But the trouble is you don't always know them till they are labeled with your pocket-book. Then the chase is changed, and you can't catch them as easily as they caught you.

I found one even in a dental convention the other day, or rather he found me, and wriggled a thousand dollars from my

pocket. And the slick, slimy, subtle fellow would have gotten fifteen hundred more if my wife's instinct had not foiled him. I do believe it needs more discretion to keep money than to earn it. I saw a woman the other day that could smell money right through your clothes. These land sharks can smell it from afar, and the way they nose for it into the most impenetrable places is a marvel. They are as shrewd as the devil.

THE FORMER DAYS.

With all our facilities for dental education, information and improvement, we certainly ought to be better dentists than our forefathers.

But are we? Did not the very consciousness of ignorance and difficulties, and the necessity for original and independent thought and investigation, give zest and pluck and discrimination that produced skill and close observation and penetration that we, who have everything cut and dried at our hand, do not possess?

Like the hardy pioneers in agriculture—rough and uncouth, it is true, but strong in mind and body, and brawn in frame and nerve—who struck strong blows in clearing the way for after generations, but whose progeny, in their luxury, lack their fathers' vim and stalwart manliness—so, while we disdain our clumsy progenitors in the profession, we fail in many things in which they excelled.

They were willing to toil and plod and wrestle with problems we find solved at our hands. They were glad to take potatoes and Indian corn for their pay, and proud to make their two or three dollars a day, while we fill our coffers with gold and live in luxury. They wore homespun, while we dress like dandies.

All right, if we do not disdain hard work, thorough thinking and severe discipline. But, like our teeth, every muscle and faculty must have hard service to have strong growth. If we take the teacher's thoughts as we do our cook's hash and pap, too lazy to do our own mastication, we shall go into decline mentally as we do bodily.

It is quite interesting to trace what is to what may be—the insignificant to the great, the feeble to the powerful, the common place to the magnificent. The child of to-day, without character or ambition becomes a mighty pillar of society; the boy of pennies and marbles becomes the millionaire; the pupil puzzled over his simplest lessons now becomes the learned professor of to-morrow. Truly what a magnificent piece of marvelous workmanship we are.

Yet how we abuse it and maltreat it, and weaken it by foolish, senseless indulgences and excesses! But though so exquisitely delicate, how wonderfully it rebounds and asserts itself when we give it the opportunity. Though the most helpless of beings at birth—thrown on the world cold and hungry, and often neglected and abused—at maturity we are the masters of the universe. In reason, profound; in passions, exquisite; in faculties, infinite; in form, dignified; in carriage, majestic, and in position, noble and commanding, we are the lords of creation.



We should be conscious of improvement. If we are not, it is a poor comment on the past, and a pretty sure evidence of present deterioration. Few of us stand still. No; nothing should satisfy us but a conscious improvement in our work and ways; our life and influence; our purse and intelligence. We criticise others severely that do not show betterment in these things, and in morals, temper, refinement and usefulness: so in our own life, every year should be a criticism on the past year. As the boy despises the weakness and narrow conceptions of the infant, and the man of the boy, and the sage of both, and the Christian of all—so we should advance in skill and character and every material good, so as to be able to ridicule much to-day that we heretofore thought valuable and clever, only still further on to be able to look back to what we now are as mere childhood to that magnificent manhood in reserve for us. Progress, ever progress should be our aim, and our constant conscious experience.

BRIEFS.

We were much shocked the other day by being told that a prominent dentist we had long admired for his writings was often intoxicated. "Why," continued my informant, "I am acquainted with most of our leading dentists, and I do not believe a majority are total abstainers. At least a fourth drink sometimes to excess, and some of them are at times beastly drunk."

I certainly hope this is an exaggerated statement. If true, it is shockingly sad.

Perhaps it was one of these who wrote in his journal: "I do not believe the public has anything to do with the character of a dentist while out of his office; and I doubt if an editor has any thing to do with it, either. It is simply none of his business."

The statement of Bonwill, is a statement indorsed by every one who has made the same measurements, that "lines drawn from the line of junction of the lower central incisors to the center of each articular face of the inferior maxilla form the sides of an equilateral triangle whose base is a line joining the centers of the condyles, and that the usual length of a side is four inches."

Information is a new dental magazine intended for patients. It is very interesting, as we might know it would be when we see it is edited by Dr. L. P. Bethel, of Kent, Ohio. We predict that it will be popular and successful. It is just the thing to be kept on the dentist's center table, and I should think many subscribers could be obtained among patients. It is only one dollar a year.

A writer in the *New York Journal of Hygiene*, has been treating of sprains and the remedies to cure them. These are rest for the injured member, applications of electricity once a day for five to seven days, and massage. In most instances, he says, my patients can use the injured joint with freedom at the end of a week. He regards this mixed treatment as the best that has come to his notice; it gets a patient well in a shorter time than the old method of liniments, and saves him days of suffering. The patient presents himself with a joint highly inflamed, extremely sensitive to the touch, and full of pain. At once use the faradic current of tension for a period of thirty minutes. At the end of that time the temperature of the

joint is lowered, the pain has disappeared, and the joint can be freely handled. Then begin massage, commencing at the elbow if the injured joint is the wrist, or the knee if it is the ankle, and continue for five minutes. This is to be repeated twice during the day by some member of the family.

Sun baths are almost as essential as water baths, quite as much so for many invalids, and the weak, sallow, spiritless class that are neither sick nor well.

Take the clothing off and sit or lie in a room where the sun shine will come on you. Change your position so as to have its effect on all portions of the body. Never mind the tanning, nor the browning, nor even the reddening, but toughen yourself to its full effect. You will need less clothing after a while, catch cold less easily, and have a more vigorous circulation, better spirits and more strength.

In writing, if we could keep in mind that "brevity is the soul of wit," we should use fewer words. So if, as a general rule, we confined ourselves to the elucidation of a single idea—one so important and beautiful we could honor it as the central gem of a cluster of thoughts, and that cluster sparkling only to illuminate the central truth, we should have shorter essays. Let us remember that words, however euphonious and bright, should be only the clothing of a still more beautiful, living fact.

TO FOLD GOLD FOIL WITHOUT CONTACT OF THE FINGERS.—The book of foil is held in the left hand and opened to the first leaf, the right half of the book is slightly raised so that the outer edge of the sheet of foil nearest the right hand will fall, with the help of a little shaking, inward so that the two edges will be approximated at the central fold of the book, which is then closed on the folded gold and pressed into contact with the fingers passed over the outside covers of the book. The same process is repeated until the leaf of foil is folded to the desired number of thicknesses. The strip of folded foil can then be cut into strips the desired width with shears.

It is a fine thing to have the reputation of being a fast workman, but it is of much more importance to be known as a good workman. If every detail is done accurately, the fingers will soon learn speed; but if there is hurry and slight, the work will soon show folly. First, accuracy, then speed.

Some writers are like a minister I once had an appointment

with at a country schoolhouse. He spoke first and I was to catch inspirations from what he might say. He floundered about for quite a time saying nothing and getting nowhere.

As we were walking home I said to him: "What were you trying to get at for the first fifteen minutes of your speech?"

"An idea," he replied, "and it took fifteen minutes to catch it."

So with many writers. They take their pen in hand and scribble away for an idea, and it sometimes takes fifteen minutes to catch it.

In reading an exhaustive essay we often have to read much before reaching the real meat of the subject.

Oh, for condensation!

I suspect a dentist of being shallow that knows it all—that replies to every suggestion, "That's nothing new; I know a better way than that," and is always ready to show you what he can do. He may be smart, but he is certainly egotistic, and he is probably so self-opinionated that he deprives himself of much he could learn by being more teachable. The wisest of us can be taught something; the most skilful can get new points, and none of us know it all.

At our conventions we can generally discern the most learned and skilful by their teachableness, simplicity of manners and the modesty of their statements.

We estimate most things by comparison. The day laborer lives well on his dollar a day till he hears of those in a neighboring village getting two dollars a day. The mechanic in Jersey was contented till he visited his Western brother whose profits were double his. Minister Jones was elated with his success till his fellow collegiate wrote him of twice his own number of converts and nearly three times his salary. My neighbor Shank had conscientious scruples to prevent his taking more than six per cent. for money in Jersey, where to take more was a crime, till he went to Kansas. Then it was "ten per cent." or whatever he could get.

Dr. Johnson was proud when his ledger showed his income last year was two thousand dollars till he reported it to some friends at convention, and found they could boast of three thousand. Prof. Mason lived sumptuously and grew fat on his salary till that delegate from Chicago University offered him five thou-

sand dollars a year, and his own college held him to his "long contract" at half that sum.

We have always time for the most important, and the most important would give us a happy, useful life. It is the trivial, the frivolous, the inconsequential, that hurries us on and causes us to slight everything, and be good for nothing. If we employed ourselves with only our best thoughts we could mature them with deliberation; if we occupied our time with our wisest acts we could master them without fret or confusion. Our plans could be plainly laid out and our work well done; our fingers would dance with skill and our spirits bound with enthusiasm. Wild oats would not choke good seed nor old age be a barren waste. Life's work would be just fun, and life's fruit would be luscious.

For sensitive dentine Dr. Clyde Payne recommends in strong terms a combination of carbonate of potassium, cocaine, carbolic acid and glycerine, as follows: Make a saturate solution of carbonate of potassium and glycerine, then a saturate solution of cocaine and carbolic acid and mix the two together on a warm glass slab. After drying the cavity thoroughly with alcohol and hot air apply a drop of the obtundent and continue the blast of hot air for five minutes. Dr. Payne states that with this remedy properly applied he is able to obtain better average results than with cataphoresis.

The man that is discouraged by difficulties, oppositions and hardships, or even by disaster, defeat and loss, will not be likely to feel the thrill of triumph or to possess the advantages of success. Yes; the man that does not look for many failures and for few successes, and that cannot profit by his failures to produce success, has not learned the secret of how great men are made. We say, "Truth crushed to earth will rise again." It is quite as truthful that a courageous man that would make himself felt, will not only rise again when crushed—and crushed again and again—but his defeats will give him wisdom, tact and skill, boldness, aggression and endurance, sharpness, penetration and final success. The young man or woman that is carried in the arms of friends and pillowed in luxury, seldom amounts to much. We must fight if we would reign, and not whine at the blows we receive. A fighter learns to fight by fighting.

FOR OUR PATIENTS.

"Dig, dig the foundation deep, young man,
Plant firmly the outer wall;
Let the props be strong and the roof be high."

Oh, never from thy tempted heart
Let thine integrity depart!
When disappointment fills thy cup,
Undaunted, nobly drink it up!

Read.

WHERE CAN I FIND A GOOD DENTIST?

How common is this inquiry.

I have been passing through the South, and throughout Virginia and Tennessee, and from Chattanooga to Mobile, and from Mobile to Savannah, and from Savannah to South Florida. Wherever the subject of dentistry was introduced, the question was—"Where and how can I find a good dentist?" This is not peculiar to the South; it is the inquiry everywhere. And it is not because there not some good dentists everywhere. I found them in the South in every city, and sometimes quite outside the cities. It is because there are so many poor dentists; yet wherever I went I was sure to find one or more who were celebrated for good work. These were always busy; while others around them were comparatively idle. I envied these prosperous ones, and wondered the idle were either not discouragd or did not qualify themselves to compete with the best. Perhaps there were these reasons: 1st, most were too lazy to improve—that is, I judge so by the slovenly appearance of their person and their office, the character of their instruments and the general neglect and barrenness of their surroundings. 2d, they had never prepared themselves to do good work, and had settled down into mediocrity. 3d, they could not see themselves as others saw them. They were blind to their faults and buried in excuses. Oh, how I did want to shake them up!

I met a lady in central Florida who remarked:

"How shall I know a good dentist when I see him? I have had work done in different cities, but I have found few first-class dentists."

How should I have answered her?

"Oh," said I. "ask the best and most intelligent citizens. They will generally know. When you see him you will generally know him by his appearance, intelligence, conversation and surroundings, and especially by the manner he approaches and diagnoses your needs."

Can not some dentists take a hint?

"WE GENTLEMEN."

It is strange how "we gentlemen" say and do things, and cultivate habits, that we would consider very undignified in the fair sex.

We strut off puffing at a pipe or a cigar right into the public street, and sometimes right into the face of our escort, without a thought of shame! "We gentlemen" never dream that the same thing in "a lady" would disgust us beyond endurance. We actually chew the nasty stuff as a cud, squirting the disgusting slime all about us as though we were to be followed by the devil instead of by decent people.

"We gentlemen" guzzle our beer, and in time our wine, and finally our whisky, making fools of ourselves, without a thought that our innocent boy just behind us will walk in our steps. A Sunday-school superintendent told me once he would flog his boy to an inch of his life if he found him with a cigar in his mouth, and yet the father smoked them every day.

"We gentlemen" spend our evenings at the club or other masculine resorts forgetting the loneliness of home without us, or the fairness of giving our wife the same privilege—the servant girl could take care of the children, you know.

Of course, it would be horrible to hear "a lady" swear and use vulgar language, and yet "we gentlemen" think them ornaments to our speech.

If the saloon and the bar room of a hotel are proper places for "we gentlemen," why are they not quite as good for our boys?—and they will answer that question practically by and by, to their shame and ours. And why should we not encourage our wife and daughters to frequent such places?

Why, in all these things, do "we gentlemen" set up a standard for ourselves that we would not tolerate in the other sex or in our children? If an act, a custom, a habit, is wrong in them, why is it not in us? Why should we take liberties we would not give them? Why should there be two standards of morals;

one for our convenience and another and a higher one to which we hold them to the strictest account?

Some time since we "professional gentlemen" and our wives were invited to an elegant entertainment. After a very proper and social time, we were treated to a sumptuous repast. To our own surprise, as eating ended, the ladies were expected to retire. I was about to follow when I was told that would not be the proper thing to do.

Immediately cigars were brought in, and the room became a veritable smoke-house.

"What does this mean?" said I to the one on my right.

"Oh," he replied, puffing away at a bundle of weeds on fire, "We are only loosening up a little. You needn't be afraid. We are going to have a good time, that is all."

"Then," said I, "why should not the ladies enjoy it with us? Let them smoke too."

"Oh, that would not be proper."

I soon found that conviviality meant looseness in a worse sense than innocent enjoyment, such as, of course, was not proper for the ladies; but very proper for "we gentlemen;" for conviviality with us soon leads to vulgarity.

There were to be speeches, and the toast master led off with one which was to be the keynote to those which should follow. He had uttered but a few sentences before he began to slip off into a slimy pool of obscenity. Suddenly looking about the room, he asked, "Are the ladies all out?" When assured in uproarious laughter that they were quite out of hearing, he illustrated a previous remark with an anecdote fit only for a brothel. During the thunders of applause two or three left the room. After "the banquet" a "gentleman" asked us why we left. He affected astonishment that we could be so "effeminate" we could not enjoy a little joking. And he said it without a blush. Of course, the whole performance would have been entirely improper if the ladies had remained, but there were only "gentlemen" present.

And yet that toast master was a Sunday-school superintendent!

"Man could direct his way by plain reason and support his life by tasteless food; but God has given us wit, and flavor, and brightness, and laughter, and perfumes to enliven the days of man's pilgrimage and to 'charm his pained steps over the burning marle.'"

Sydney Smith.

A GOOD DENTIST—BUT.

Sam was a good dentist—*but*; and a few buts were the cause of his fall.

He was a bright fellow, *but he was never quite ready for his work*. Nine o'clock was the hour for his first appointments, *but* he was generally late; and if he was not late, his office was not ready for his customers. When all was ready, he could work with great rapidity. He hustled about as though determined to catch up with something just ahead; *but* this was never quite satisfactory to his patient who had been waiting, and his second patient was sure to complain because her time was encroached on.

If he had no appointment in the morning, or if it was stormy, he had a good excuse to drop in on his chum Fred, the young law student, for a leisure hour. *But*, how provoking. Some one was sure to brave the storm, and though it was only a toothache or a trifle of work, or for a bit of advice, he would complain of the dentist's absence and refuse to accept the excuses the office boy would give for his absence.

Sam was not an idler; he must be busy at something; so that if his chum Fred happened in when he had nothing to do, they of course entered into some game to pass away the time. *But* we all know how hard it is to stop in the midst of a game, so that often a patient would be kept waiting, "just for a moment," *but* a moment too long for the patience of his patient. A good patient was in this way sometimes lost, at least for a second appointment. If he gave offence he was profuse in excuses, *but* he should have known a dental office was no place for loungers and games, not even when he hid himself away in the laboratory.

A pool-room was handy by Sam's office. On rainy days, when he *knew* no one would be in, he and his chum would take a hand "just for one game." If any one did want him, the office boy knew where to find him. *But* it often happened that "just a moment" intervened between the call and the order of going, and he lost his customer.

Sam was not a great smoker, and seldom drank anything stronger than beer. But one day a lady came into my office and said, very abruptly:

"Doctor, do you use tobacco?"

"Why, no, madam; why do you ask such a question?"

"Well, it is because I have had an embarrassing experience. I was recommended to Dr. Barker as a first-class dentist, and I

believe he is; *but* his breath smells so strong of stale beer and tobacco, I was disgusted. I paid him for what he had done for me, and left, though I had not the courage to tell him why. A friend told me your young competitor, Dr. Jenks, was a gentleman and a scholar, just from college, and noted for good work, so this morning I stepped in there. *But* I had hardly taken my seat before his breath fairly startled me. It was almost as bad as the old man's. I made an excuse to leave, and left. I want to find a dentist as clean as a woman, as well as skilful."

That lady paid me forty-six dollars, and within a year sent me friends that brought her patronage up to over two hundred dollars.

The young man casually met her one day and pressed her for a reason why she left him so abruptly. She frankly told him, *but* it did him little good. He had no patience "with such Puritanic nonsense." He knew he was scrupulously clean, and always thoroughly rinsed his mouth before going to work, and used spices besides.

Sam had another *but* that perhaps was not so serious, *but* it did have its influence against him. He was very bold to assert that his associations out of office were nobody's business. He believed he was entitled to the privileges of his social club and other little evening outings and convivialities, as he pleased, "if they did not encroach on his office hours and duties." *But* these did affect his business, especially among the ladies, and they are always of the most importance with the dentist.

Sam had a splendid office in a splendid section of the city, and he was a splendid-looking fellow—all just calculated to attract the aristocratic people who resided about him. *But* they were far too exacting, and he felt out of place. He was gradually left too much to himself, and he became disgusted with his surroundings. His office is now where the notions of the community are not so "Puritanic." He no longer has to cater to the "over-exacting aristocracy," and he is quite out of temper with "the religious and extra-moral classes." He says he can make more money out of "the common people," and I fear he is fast becoming rather common himself.

In every mile of railway there are seven feet and four inches that are not covered by the rails—the space left between them for expansion.

THE TEETH OF MAN AND ANIMALS.

DEAR CHILDREN:—Did you ever notice **that** your teeth are different from those of your cat, or dog, or any other animal? And that the teeth of the cat are not like the teeth of a horse; or a dog's like those of a cow? Why do you suppose there is a difference? First, take a looking-glass and examine your own teeth. See how long and wide and thin the front teeth are. Then back of these you see a sharp pointed tooth (which is often called the canine tooth by some people, because it resembles the shape of a dog's tooth. The word canine, meaning dog). The correct name of this tooth is the cuspid tooth, because it has a projecting point called a cusp, which is like the end of a slate pencil that is not very sharp. Then back of this tooth on either side of the mouth, you will notice two teeth that have quite a large biting surface. On these you will see several of these cusps, or points, and on this account they are called multi-cuspid teeth, meaning that they have many of these cusps.

Now take your little kitten or cat and raise its lip. Be careful that it does not bite you for a cat don't like to have you put your fingers in its mouth. After the lip is raised you will see a row of shining teeth.

Those in front look more like a row of tiny beads than they do like teeth.

But at each side of them are long, sharp teeth about as large around as a darning needle and look almost as sharp. I dare say you would prick your finger if you pressed it too hard against the ends of these teeth. Then look at the teeth back of them—what long, sharp cusps they have. Do you wonder that a little mouse squeals when the cat catches him up in her mouth? Now look at Fido's teeth. (Most all dogs in stories are called Fido.) This dog's teeth look something like the cat's, although they are larger and not so sharp. But sharp enough, as you well know, if you have ever been bitten by a dog. Now here is the old cow. You had better let your father open her mouth. You see eight large, flat teeth looking something like very small shovels. These are on the lower jaw. Your father lifts her upper lip and you say: "Why you poor old bossy, you've lost your upper teeth."

Then perhaps you wonder if some good man like the dentist could not make her a set of teeth like those your mamma takes out of her mouth to clean. You feel like crying because bossy has lost her teeth and cannot eat. But do you know, my dear little readers, that cows never have front teeth on the upper jaw?

How do they eat, do you ask? Just notice how a cow will twist her tongue around a bunch of grass and then throw her head slightly forward while eating. In this way she holds the grass with the tongue and in throwing the head forward the lower teeth are forced against the grass, cutting it off.

But back in her mouth you will see she has eight very large teeth on each side of both upper and lower jaws, with which she chews her food.

Now the teeth of the horse are arranged differently. The horse has large shovel-shaped teeth in front on both upper and lower jaws. When the horse is eating grass in the field, he bites the grass and usually pulls his head backward toward his front feet (instead of pushing it forward like a cow) and in this way nips off the grass, which he chews with the large double teeth that are further back in his mouth.

Now if you have the chance to see the teeth of a mouse, or rat, or squirrel, just take a good look at them; we will tell you something interesting about them at another time.

Have you ever noticed how many teeth a fish has and how sharp they are? Some kinds of fishes have teeth all over their mouths; even back in the upper part of the throat. The teeth of fishes are mostly fine and sharp like a needle. The first time your father goes fishing and catches a fish, just look at its teeth. During the past summer you saw a great many toads, did you not? Did you see their teeth?

No! I guess not; for toads have no teeth? live on insects and such things, and do not have any use for teeth. Did you ever see a toad catch a fly or insect? Well, he can run his little tongue out of his mouth much farther than you or I can, and when an insect gets near his mouth, out runs that tongue, so swift you can hardly see it, and he grabs the insect and swallows it.

Frogs have one row of teeth in the upper jaw but no teeth in the lower.

Then there is that turtle that scared you one day when you were playing near the brook. But you need not have been scared for he had no teeth with which to bite you. Along his jaws, however, is a kind of horny plate which takes the place of teeth, and he might have pinched you with that. Now I think I have said enough for this time because I want you to think this over, and next time I will tell you some more interesting things about the teeth.

Information.

At sea-level an object 100 feet high is visible a little over 13 miles. If 500 feet high, it is visible nearly 30 miles.

The population of the earth at the time of the Emperor Augustus is estimated at 54,000,000. It is now estimated to be about 1,400,000,000.

It is a strange fact that injuries to the tongue, whether of man or animal, heal more quickly than those of any other part of the system.

The troops with which the King of Abyssinia gained his victory are accustomed to live for months together on handfuls of flour and dried peas.

Little Mamie had heard some one use the word "sockdolager," and asked her little 5-year-old brother what it meant. "Why," he replied with the air of one possessing superior knowledge, "it's when you go to the church and the preacher gets tired of talking, and he says: 'Let us sing the sockdolager.'"

"Father," said the little son of a clergyman, "I think you told a story this morning when you was preaching." "Why, what do you mean?" asked the good man, in surprise. "Well," answered the observing little fellow, "you said 'One word more and I have done,' and then you went right on and talked for nearly ten minutes."

GOOD ADVICE, BUT——.—The Doctor: Six cigars a day? No wonder you have a pain in your chest. A man in your condition and with your temperament ought not to smoke at all. If you don't give it up you will have what they call the "tobacco heart."

The Patient: I'm afraid I've got it already, doctor. I know I haven't the heart to give up smoking. *Chicago Tribune.*

WRITING ON GLASS.—A patent has been granted in Germany for a new method of writing on glass, using an aluminum point. The glass which is to be written on is first moistened with vinegar and the writing or drawing made with the point. Fine particles of aluminum adhere to the glass, which, when dry, shows the marking in silvery lines that cannot be readily removed by friction. *Evening Post.*

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